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Michelle Miller-Day
Chapman University, millerda@chapman.edu

Jennifer A. Kam
Pennsylvania State University

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More than Just Openness: Developing and Validating a Measure of Targeted Parent-Child Communication about Alcohol

Michelle Miller-Day, Ph.D. and
Communication Arts & Sciences, The Pennsylvania State University

Jennifer A. Kam, M.A.
Communication Arts & Sciences, The Pennsylvania State University

Abstract

Research addressing parent-child communication on the topic of alcohol use relies heavily on assessing frequency of discussions and general assessments of openness in parent-child communication, ignoring the complexity of this communication phenomenon. This study adds to the literature by articulating a conceptualization and developing a measurement of parent-child communication—targeted parent-child communication about alcohol—and comparing the efficacy of targeted parent-child communication about alcohol in predicting positive expectancies of alcohol use and recent alcohol use. The predictive power of general openness in parent-child communication and frequency of communication about alcohol also were assessed. Students in 5th and 6th grade (N = 1407) from 29 public schools completed surveys. Targeted parent-child communication about alcohol was negatively associated with both outcomes. Frequency and general openness were only negatively associated with positive expectancies regarding alcohol. Implications of these findings for the etiology and prevention of substance use are discussed.

In the U.S., alcohol abuse has become a part of our public consciousness due to the pervasive use by our nation's youth (Johnston, O'Malley, Bachman, & Schulenberg, 2007). A national survey revealed that 39% of 8th grade students reported having consumed alcohol in their lifetime with 18% consuming to the point of drunkenness (Johnston et al., 2007). Concern over alcohol use rates stem from the finding that the earlier youth initiate alcohol use, the more likely they are to develop alcohol dependence and related problems in adulthood (Grant & Dawson, 1997). Based on the Gateway Hypothesis, Collins (2002) suggests that most adolescents begin with alcohol consumption followed by other substances. The risks of teen alcohol and other substance use include accidental injury, addiction, academic failure, impaired social maturation, and mortality (Johnston et al., 2007). The seriousness of the consequences of alcohol use by youth has generated policies, programs, and research interest in the prevention of use and abuse among youth. An outcome of these efforts over the past few decades is a complex body of knowledge concerning the etiology of alcohol use, revealing a dynamic and multifaceted system of personal and contextual factors of influence (Hawkins, Catalano, & Miller, 1992).

The question remains, what influences the uptake and continued use of alcohol and other substances among youth in the U.S.? The prevention literature indicates that parental influences, parent-child communication in particular, may effectively buffer against the risks of early use initiation (Brody, Murry, Kim, & Brown, 2002; Miller, Alberts, Hecht, Trost, & Krizek, 2000), predict negative attitudes toward alcohol use (Perry et al, 2002), and reduce

All correspondence should be directed to the first author at 234 Sparks, University Park, PA 16802, U.S.A., or via, mam32@psu.edu.

binge drinking (Turrisi, Mastroleo, Mallett, Larimer, & Kilmer, 2007). A 2000 report by National Institute on Drug Abuse emphasized the importance of parent-child communication in predicting young people's substance use intentions and related negative outcomes. Parents may be more influential on children's substance use than peers (Kelly, Comello, & Hunn, 2002; Kumpfer & Kaftarian, 2000). Thus, parent interventions on communication have been successful in impacting youths' substance use (Johnson et al., 1998; Kumpfer, Greene, Bates, Cofrin, & Whiteside, 2007).

Regrettably, parent-child communication about alcohol in much of the prevention research is conceptualized globally (good or bad communication) and operationalized in terms of general openness of parent-child communication or frequency of communication about alcohol or other drugs (AOD) (see for example, Carlson, Moore, Pappas, Werch, Watts, & Edgemon, 2000 or Jackson, Bijstra, Oostra, & Bosma, 1998). These approaches to understanding communication, however, are limiting and do not address the complexity of parent-child communication about AOD. A more multifaceted understanding of communication is needed to determine if certain approaches to communicating about alcohol are more effective than others at influencing the extent of offspring's alcohol use and to enhance prevention efforts.

Thus, this study's first aim is to articulate a conceptualization and develop a measure of targeted parent-child communication about alcohol that includes interactions on the topic of alcohol. The second aim is to compare the strengths in associations between three dimensions of parent-child communication (frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol) and alcohol expectations and alcohol use among youth in 5^{th} and 6^{th} grade.

Parent-Child Communication as the Anti-Drug

If one watches television it is hard to miss slogans such as "Parents—the Anti-Drug" that are broadcasted in public service ads. These messages, which typically call upon parents to participate in efforts to prevent children from using alcohol and other drugs, have met with mixed success (Hornik et al., 2002). These campaigns seek to empower parents to talk with their children about the risks of alcohol and other drug use before they reach the age of highest risk for use (e.g., National Youth Anti-Drug Media Campaign; Hornik et al. 2002). Yet, the Partnership for a Drug Free America (PDFA, 2002, 2005) and the U.S. Department of Health and Human Services (2007) reveal that the current generation of parents, who are the most drug-experienced to date, are not more, but *less* likely to talk with their teens about drugs than those parents in the 2000 survey. It appears that, although there is a clear call for parents to talk to their offspring about alcohol and alcohol use, many parents are not engaging in this talk. This is a concern given that parents are a primary source of influence on their children's perceptions and behaviors regarding alcohol consumption (Barnes, Reifman, Farrell, & Dintcheff, 2000).

Parents as Socialization Agents

A review of the research in the area of parent-child communication about alcohol and other substances reveals that most investigations are based on a parents-as-socialization-agents model (Miller-Day, 2008). The premise is that the intergenerational transmission of parental norms and expectations are learned, internalized, and linked to performance and social competence (Peterson & Hann, 1999). Consequently, the focus of this research tends to concentrate explicitly on parental anti-drug socialization efforts, primarily unidirectional messages from parents to their preadolescent or adolescent children. A review of studies in this area has led to suggestions about how parents should address the topic.

Research to date points out that several content categories occur in these conversations. These include warnings about the dangers of AOD, with a focus on health, safety, and legal consequences of use (see for example, Brody et al., 2005; Miller-Day & Dodd, 2004; Miller-Day, 2002; Miller-Day, 2008). Research also suggests that parents provide advice for how to address AOD situations, such as handling peer pressure, drug offers, and proffering strategies for avoidance (Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001; Miller-Day & Dodd, 2004). In addition, parents also convey proscriptive information about what their offspring should not do or believe, as well as prescriptive information about what their offspring should do or believe (Miller-Day & Dodd, 2004). This information includes the "should" and "should nots," but also the consequences for not conforming to these expectations. Pro/prescriptive information may include suggestions for healthy living, encouragement to use personal judgment, articulation of rules, and sanctions for transgressions (Baxter, Bylund, Imes, & Scheive, 2005; Kelly et al., 2002; Miller-Day & Dodd, 2004; Miller-Day, 2008). For some parents, warnings, advice, and pro/prescriptions to offspring are bolstered by evidence in the forms of personal stories and illustrations or written evidence. Others deviate from the lecture format to invite children to participate and contribute their own thoughts and opinions (Ennett et al., 2001).

The Complexity of Parent-Child Communication about Alcohol

A number of studies focus on conversations about alcohol, the most frequently used substance among adolescents (Johnston et al., 2007). Most of these studies focus on single conversations and characterize effective communication as open (e.g., "I can almost always talk with my parent about what is on my mind" or "When I ask questions, I get honest answers from my mother/father.") and frequent ("How often do you talk with your parent about alcohol?"). In a review of more than 36 articles published from 1995–2005 addressing parent-child communication about substances, only 14% offered conceptualizations of parent-child communication beyond openness or frequency (Miller-Day, 2006). Such findings warrant the development of a more complex conceptualization of parent-child communication about alcohol.

A more complex and multi-faceted view of parent-child conversations does seem to matter. Rees and Wilborn (1983) reported that AOD-using adolescents in their study believed that parents should directly address the topic of alcohol with their children and a lack of parental input regarding expected AOD behavior is often interpreted as parental disinterest. This finding was supported in Miller-Day's (2008) work where she concluded that while establishing a general, open communication environment was important in parent-child relationships, setting a no tolerance rule while providing the child with AOD information in an ongoing and direct fashion is particularly important for effectively inhibiting offspring's substance use. Parents who are not just open with their children on a variety of topics, but clearly and directly communicate that they are intolerant of drug use are less likely to have children who use drugs (Bahr, Hoffmann, & Yang, 2005; Miller-Day, 2008). In general, it appears that open, frequent conversations about substances shape youth attitudes (Barnes et al., 2000).

Currently, however, outcome-based research has focused mostly on the frequency and openness of communication rather than the more complex model of communication about AOD suggested in recent studies (Miller-Day & Dodd, 2004; Miller-Day, 2008; Sherriff, Cox, Coleman, & Roker, 2007). Substance use and abuse prevention would benefit from a new, multifaceted approach to studying parent-child communication about AOD by adding targeted parent-child communication about alcohol to the openness and frequency constructs.

Targeted Parent-Child Communication about Alcohol

Targeted parent-child communication emerged from Miller-Day and Dodd's (2004) analysis of parent-child conversations about alcohol and other drugs. Building on Miller et al.'s (2004) identification of targeted "drug talks," Miller-Day and Dodd (2004) discovered that parents engaged in on-going or targeted socialization efforts to protect their children from AOD use. Targeted efforts were limited to a particular point or few points in time during the offspring's development, and conversations were expressly on the topic of AOD use. Targeted parent-child communication about alcohol most closely resembled the *'"sit down, let's have a talk'* one-shot discussions advocated in media campaigns" (Miller-Day & Dodd, p. 83).

Based on evidence that alcohol is the most frequently used drug among adolescents (Johnston et al., 2007) and that optimal periods for prevention efforts include pre and early adolescence (Dielman, 1994), this study is limited to exploring the efficacy of parent-child communication in association with alcohol expectancies and behavior among youth in 5th and 6th grade. Specifically, given the review of the literature and the burgeoning knowledge of AOD-directed parent-child communication developed in recent years, this study predicts the following:

H1: Frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol represent interrelated but distinct dimensions of parent anti-drug socialization efforts.

H2: Frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol are negatively associated with positive expectancies about alcohol and recent alcohol use.

H3: Targeted parent-child communication about alcohol will have stronger negative associations with positive expectancies about alcohol and recent alcohol use than frequency of parent-child communication about alcohol and general openness in parent-child communication.

Method

Participants

The data for this study were drawn from an evaluation of the *keepin' it REAL* substance use prevention program, a school-based curriculum funded by the National Institute on Drug Abuse. The sample included 1407 5th and 6th grade youth from 29 public schools in Phoenix, Arizona who participated in the wave involving the parent-child measures. The mean age was 12 years (*SD* = 1.00), where 51% were female. Students identified their ethnic/racial background by selecting from a list of eight items: Mexican (28%), Mexican American or Chicano (50%), Other Latino/Hispanic (5%), American Indian or Alaskan Native (2%), African American or Black (8%), Asian or Pacific Islander (1%), White (4%), and other category (2%).

This project's aim was to adapt a culturally grounded middle-school-based substance use prevention program for students in elementary school and to determine the appropriate age at which to introduce the intervention program. Schools were randomly assigned to a control condition or one of two intervention program conditions (Gosin, Marsiglia, & Hecht, 2002). The control schools did not receive either condition but instead received other substance-use-related programs that the schools used outside this project. Neither condition specifically taught family-related content, such as providing suggestions for improving general openness in parent-child communication or targeted parent-child communication about alcohol use. The conditions only targeted the youth attending the schools; thus, data from parents were not obtained.

One of the current study's original objectives was to compare the influence of parent-child communication among different ethnic groups, anticipating it would exhibit a stronger effect among Mexican-heritage youth due to the cultural value of familism, which stresses close family relationships (Galanti, 2003). Nevertheless, this study's sample size for other ethnic groups did not permit these comparisons and alternative procedures are discussed below.

Measures

This study's variables are frequency of parent-child communication about alcohol, general openness in parent-child communication, targeted parent-child communication about alcohol, positive expectancies about alcohol use, and recent alcohol use (see Table 1 for summary statistics).

Targeted parent-child communication about alcohol—The targeted parent-child communication about alcohol scale (TPCCA) was developed by the lead author. A review of the empirical literature was conducted to ascertain the salient domains of targeted parent-child communication about alcohol (Baxter et al., 2005; Brody et al., 2005; Ennett et al., 2001; Miller-Day & Dodd, 2004; Miller-Day, 2002; Miller-Day, 2008). Several dimensions of targeted communication about AOD were noted in the literature including parental warnings about the dangers of AOD, advice for how to address AOD situations such as offers of a substance or handling peer pressure, and articulation of rules and sanctions for transgressions. In conveying these warnings, advice, and establishing rules, parents may offer personal stories and illustrations, presenting evidence from the written materials, turning television viewing into "teachable moments" for sharing opinions and establishing norms, express disappointment for violations, or soliciting offspring's thoughts and opinions. Fifteen items were developed to assess these dimensions.

Items were written based on qualitative content from existing studies (Miller-Day, 2008; Miller-Day & Dodd, 2004; Sherriff et al., 2007) to represent the variety of parental strategies. For example, Miller-Day and Dodd (2004) found that over half (56%) of all respondents reported that parents use personal examples such as stories to illustrate how friends and family members have been affected by alcohol use. This finding along with the illustrative examples reported in Miller-Day and Dodd's and the other studies contributed to the development of the item, "At least one of my parents…tells me stories of people who drink alcohol or have been drunk."

The items developed from this previous research were then submitted for consideration and discussion to two focus groups ($N = 11$). To minimize the number of items, focus group participants were asked to select the single best item to represent each of the following dimensions: Hinting indirectly not to use alcohol, providing direct warnings about the dangers of AOD, lecturing about alcohol or alcohol use, providing advice for how to address AOD situations such as offers of a substance or handling peer pressure, offering rules and sanctions for alcohol use, sharing personal stories and illustrations as example for why not to drink, presenting evidence from the written materials, turning television viewing into "teachable moments" for sharing opinions and establishing norms, expressing disappointment for alcohol use, and soliciting offspring's thoughts and opinions. Focus group participants also were encouraged to provide reasons for choosing the item and provide feedback. This feedback and the frequency of item selection were used to select a single-item for each dimension of a targeted conversation about alcohol resulting in a 10-item scale (see Table 2).

For each of the 10 items, participants in the current study responded to the stem, "How much do you agree with the following for *at least one* of your parents?" using a 5 -point scale (1 = disagree a lot and 5 = agree a lot). The scale in its entirety is listed in Table 2, but a sampling of these items include: At least one of my parents…"has warned me about the dangers of

drinking alcohol," "will make a comment about how drinking alcohol is bad if a character on TV is drinking or drunk," or "has given me rules to obey about drinking alcohol" (α = .91).

Frequency of parent-child communication about alcohol—The one-item measure was adapted from Wills et al. (2003) to assess the frequency of parent-child communication about alcohol. Youth were asked, "How much have your parents talked with you about alcohol use?" and responded using a 5-point scale (1 = never to 5 = extremely much).

General openness in parent-child communication—Based on Ritchie and Fitzpatrick's Revised Family Communication Pattern Scale (Ritchie & Fitzpatrick, 1990), three items were developed to measure openness in parent-child communication excluding any reference to AOD. Students responded to the following items on a 5-point scale (1 = disagree a lot and 5 = agree a lot): —At least one of my parents…" "…listens to my point of view," "…says it's important to get my ideas across even if others don't like it," and "…asks for my opinion when our family is discussing something (α = .82).

Positive expectancies regarding alcohol use—Expectancies regarding alcohol use represent students' perceptions of the positive consequences of alcohol consumption. To assess this variable, Hansen and Graham's (1991) measure of students' expectations about consuming alcohol was utilized. Students responded to the item, "Drinking alcohol makes parties more fun," using a 4-point scale (1 = strongly disagree to 4 = strongly agree). The score was reverse-coded so that a high score indicated students had positive expectancies of drinking alcohol.

Recent alcohol use—To measure the amount and frequency that students consumed alcohol within the last 30 days prior to participating in the study, Graham et al.'s (1984) measure was used. Students responded to the question, "How many drinks of alcohol (more than a sip or beer, wine, or liquor) have you had in the last 30 days?" by using a 7-point scale (1= none and 7= more than 30).

Although single items were used to measure frequency of parent-child communication about alcohol, positive expectancies regarding alcohol use, and recent alcohol use, these one-item measures were well-established measures from previous research (e.g., Hansen & Graham, 1991; Graham et al., 1984). Further, there were survey length limitations associated with a large-scale intervention study, the participating youths' age, and time available in schools.

Procedure

Prior to recruitment, the project received approval from the human subjects institutional review board. Project personnel then met with or presented to superintendents, principals, teachers, and school boards. Written consent was obtained from parents and assent was obtained from students prior to data collection. Questionnaires were administered in homeroom, science, or health classes by trained proctors. The students took 45 minutes to complete questionnaires using separate, scannable response forms. Procedures were in place so that teachers who remained in the classroom could not see the students' responses. Confidentiality was emphasized by the proctors who were available to respond to students' questions or problems.

Results

The overwhelming majority of the current study's sample consisted of Mexican-heritage youth (78%). Given cultural differences in family practices (Kumpfer, Alvarado, Smith, & Bellamy, 2002) it had been our intention to examine cultural differences. Nevertheless, multigroup analyses comparing different ethnic groups could not be conducted, given the small sample sizes of each ethnic group. We calculated the analyses using the Mexican-heritage participants

only as well as the entire sample. The results and conclusions from these analyses remained essentially the same. Findings from analyses of the entire sample are discussed below.

The analyses began by examining the three-part conceptualization of parent-child communication posed in the first hypothesis of this study. To accomplish this, it was necessary to determine if targeted parent-child communication was distinct from measures of general openness in parent-child communication and frequency of parent-child communication about alcohol as posited in the first hypothesis. Next, analyses addressed the second and third hypotheses, comparing the predictive power of the three parent-child communication constructs.

Item-Level Analysis of the Targeted Parent-Child Communication about Alcohol Scale

To assess if frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol represented distinct dimensions of parent-child communication, this study examined the inter-item correlations of the three measures. The analyses revealed that the parent-child communication items across the three scales (frequency, openness, and alcohol-specific items) were moderately to highly correlated with each other (see Table 3). Overall, the *r*s ranged from .30 to .71. One item (TPCCA1) had a noticeably lower correlation with all other items, ranging from .10 to .33. This item asked students whether at least one of their parents "has not directly talked with me about alcohol use, but has given hints that I should not use." Based on the inter-item correlations, this item stood out because of its low correlations with all other items. The remaining items, however, were moderately to highly correlated.

Frequency of parent-child communication about alcohol had correlations ranging from .30 −. 37 with items of general openness in parent-child communication. When correlated with items in the targeted parent-child communication about alcohol scale, the frequency of parent-child communication about alcohol item exhibited correlations ranging from .36 −.51, with the majority of the correlations being within the .40 −.51 range. Overall, these correlations suggested a distinction among the three constructs, with general openness in parent-child communication and targeted parent-child communication about alcohol displaying different ranges of inter-item correlations than frequency of parent-child communication about alcohol. The inter-item correlations, however, between the three items of general openness in parent-child communication and the nine remaining items (with the exception of TPCCA1) of parent-child communication about alcohol were moderately to highly correlated, more so than with the item measuring frequency of parent-child communication about alcohol, thereby warranting further assessment of the dimensionality of these 13 items (three general openness items and 10 targeted parent-child communication about alcohol items) for a parent-child communication scale.

Measurement Dimensionality

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to determine the factor structure of the parent-child communication scale, which was intended to be bi-dimensional. Thus, CFA is the most appropriate procedure to use to verify the two-factor structure; however, EFA may precede CFA in cases with newly developed scales and new samples, such as in the current study. Some researchers suggest that first conducting an EFA and then a CFA is the best procedure (Worthington & Whittaker, 2006).

EFA was run with the principal-axis factoring direct oblimin rotation method, retaining factors with an eigenvalue over one. The result was a two-factor 13-item solution accounting for 61% of the total variance. For the first factor (general openness in parent-child communication), the loadings for the three items ranged from .58 to .87. For the second factor (targeted parent-child

communication about alcohol), the loadings for nine items ranged from .56 to .82; however, one item (TPCCA1) had small loadings on both factors (.13 and .25). As this particular item was the only one in the scale to have a small loading and a low correlation with all other items, the decision was to drop this item (TPCCA1), thereby leaving the targeted parent-child communication scale with nine items ($\alpha = .92$). In short, the inter-item correlations implied a unidimensional scale, yet the EFA suggested a bi-dimensional scale. Consequently, the next step was to confirm the dimensionality of the scale, thereby distinguishing between general openness in parent-child communication and targeted parent-child communication about alcohol.

This study used LISREL 8.80 to assess the dimensionality of the parent-child communication scale by using confirmatory factor analysis (CFA). To address the missing data, the full information maximum likelihood (FIML) method was used (Graham, Cumsille, & Elek-Fisk, 2003). To assess the factor structure of the parent-child communication scales, a one-factor 12-item CFA was examined (three general openness items and nine targeted parent-child communication about alcohol items). Frequency was excluded from this step because, as a single item measure, it is not amenable to CFA. Furthermore, based on the inter-item correlations, the item measuring frequency of parent-child communication about alcohol appeared distinct, having different ranges in correlations with the general openness items and the targeted parent-child communication about alcohol items.

Because χ^2 is influenced by sample size, particularly given this study's large sample ($N = 1407$), model fit was assessed with the RMSEA (Browne & Cudeck, 1993). In particular, Kline (2005) states that "RMSEA = .05 indicates close approximate fit, values between .05 and .08 suggest reasonable error of approximation, and RMSEA = .10 suggests poor fit" (p. 139). Based on these criteria, the one-factor 12-item model did not fit the data well (FIMLχ^2 [54] = 819.53, $p < .001$; RMSEA = .10; 90% CI = .096-.110). Factor loadings ranged from .64 to .83. The value for RMSEA was unacceptable.

Because the one-factor 12-item model did not fit the data adequately, a two-factor CFA was conducted. The general parent-child communication factor was estimated using three indicators, and the parent-child communication about alcohol factor was estimated using nine indicators. The two-factor CFA fit the data adequately (FIMLχ^2 [53] = 433.92, $p < .001$; RMSEA = .07; 90% CI = .067–.079). Factor loadings for the general parent-child communication factor ranged from .74–.80 and .67 to .84 for the targeted parent-child communication about alcohol factor. The inter-factor correlation was high at .79.

Next, we examined the χ^2 difference test to determine the statistical significance in worsening or improving the model fit when paths were removed or added (Kline, 2005). The test involved subtracting the χ^2 and degrees of freedom of the comparison model from χ^2 and degrees of freedom of the nested model. When the χ^2_{diff} value was large, the equal-fit hypothesis was rejected; thus, providing empirical support for the comparison model (Kline). When comparing the two-factor (comparison) model with the one-factor (nested) model using the χ^2 difference test, the model fit improved significantly from one to two factors (χ^2_{diff} [1] = 385.61, $p < .001$).

The general openness in parent-child communication and targeted parent-child communication about alcohol factors were highly correlated, yet they were statistically distinct based on the χ^2 difference test and the CFAs. In sum, the results from the inter-item correlations, EFA, and the CFAs provide evidence for the interrelated yet distinct nature of general openness in parent-child communication and targeted parent-child communication about alcohol. Moreover, as suggested by inter-item correlations, frequency of parent-child communication about alcohol was distinct from both general openness in parent-child communication and targeted parent-child communication about alcohol; thus, supporting the first hypothesis.

Assessing the Predictive Power of the Three Parent-Child Communication Dimensions

The second hypothesis proposed that frequency of parent-child communication about alcohol, general openness in parent child communication, and targeted parent-child communication about alcohol would be negatively related to positive expectancies about alcohol use and recent alcohol use. Thus, this study assessed the theoretically proposed correlations between constructs measured at the same time via path analysis (Hoyt, Warbasse, & Chu, 2006).

A path analysis was conducted for a just-identified model to determine the associations among frequency, openness, and targeted parent-child communication and positive expectancies and recent alcohol use, while controlling for program effects (see Figure 1). Because the data came from a larger evaluation of a substance use prevention program, a dummy variable was created to represent the experimental conditions (control = 0; intervention = 1) and paths were drawn from this dummy variable to frequency of parent-child communication about alcohol, general openness in parent-child communication, targeted parent-child communication about alcohol, positive alcohol expectancies, and recent alcohol use. Because the intervention did not address parent-child communication, we did not anticipate any effects and were not using these data to assess the outcomes of the intervention.

The frequency of parent-child communication about alcohol was not significantly associated with recent alcohol use (unstandardized $\beta = .00$, $SE = .03$, $z = .10$, *ns*), but was significantly negatively associated with positive expectancies about alcohol use (unstandardized $\beta = -.06$, $SE = .02$, $z = -2.72$, $p < .05$). Openness in parent-child communication was not significantly associated with recent alcohol use (unstandardized $\beta = -.03$, $SE = .04$, $z = -.68$, *ns*) but had a significant negative association with positive expectancies regarding alcohol use (unstandardized $\beta = -.07$, $SE = .04$, $z = -2.02$, $p < .05$). Finally, targeted parent-child communication about alcohol use was significantly negatively associated with both positive expectancies regarding alcohol use (unstandardized $\beta = -.14$, $SE = .04$, $z = -3.59$, $p < .05$) and recent alcohol use (unstandardized $\beta = -.17$, $SE = .04$, $z = -3.97$, $p < .05$). Overall, the model accounted for 8% of the variance in positive expectancies and 4% of the variance in recent alcohol use. The second hypothesis positing that the frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol use are negatively associated with positive expectancies regarding alcohol use and recent alcohol use was partially supported.

By looking at the path coefficients, the third hypothesis postulating that targeted parent-child communication about alcohol would be a stronger predictor of positive expectancies regarding alcohol use and recent alcohol use was supported. Targeted parent-child communication about alcohol was the only type of parent-child communication that was significantly associated with both outcomes, and its path coefficients were larger than all other paths between the other two communication variables and the outcomes.

Post Hoc Analysis

Because the item measuring indirect targeted parent-child communication about alcohol did not fit well with the other nine items in the targeted parent-child communication scale in the inter-item correlations and EFA, it was excluded from the analyses testing the second and third hypotheses reported above. The item states, “At least one of my parents…has not directly talked with me about alcohol use, but has given hints that I should not use.” The remaining nine items in the TPCCA scale assessed messages that were conveyed directly to the adolescent while this anomalous item taps what Miller-Day and Dodd (2004) suggest is indirect communication. This is of interest because indirect messages such as hinting are noteworthy strategies emerging in a variety of previous studies (see for example, Miller-Day, 2008; Miller-Day & Dodd,

2004; Sherriff et al., 2007). As a result, a post hoc analysis was conducted to assess this variable's association with the two outcomes.[1]

A path analysis was run to determine whether the one indirect item (TPCCA1), along with frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol were associated with positive alcohol expectancies and recent alcohol use. The indirect parent-child communication about alcohol item was not significantly associated with positive expectancies about alcohol use (unstandardized $\beta = .02$, $SE = .02$, $z = 1.23$, *ns)* or recent alcohol use (unstandardized $\beta = -.03$, $SE = .02$, $z = -1.27$, *ns)*. We cannot know if this lack of association resulted from measurement limitations (e.g., use of a single item) or reflects a weak effect of indirect communication, although previous research suggests that indirect messages are less effective than direct messages in deterring actual risky behaviors (Miller-Day & Dodd, 2004; Miller-Day, 2008). Researchers should work toward developing and validating more items measuring indirect targeted parent-child communication about alcohol (e.g., parental hints, criticism, or permissiveness regarding alcohol and alcohol use), given that past research as cited above found that parents frequently use indirect communication in attempts to discourage their offspring from consuming AOD.

Discussion

This paper argues that previous substance use research on parent-child communication conceptualized communication in terms of frequency and general openness and that these variables, while valuable, do not address the complexity of parent-child communication about alcohol. Hence, the present study builds on recent research to extend the conceptualization to include a third variable, targeted parent-child communication about alcohol. This study began by examining whether three separate constructs were apparent as predicted in the first hypothesis. This hypothesis was supported by item-level analyses, EFA, and CFAs, providing evidence for the interrelated yet distinct nature of these three parent-child communication dimensions.

The second and third hypotheses examined the relationships between adolescent alcohol expectations and consumption and the three aspects of parent-child communication. All three variables were negatively associated with positive expectancies about alcohol use. It appears that having frequent and open parent-child conversations in general and discussing alcohol in particular leads to expectations that there are more negative consequences of use. Yet, only when these conversations discuss alcohol specifically, in the form of targeted parent-child communication about alcohol was there a negative impact on the recent use of alcohol. It seems that alcohol use may be reduced only by directly discussing the topic of alcohol, rather than merely having open conversations in general. Consequently, the second hypothesis was partially supported (i.e., frequency and general openness were associated only with alcohol expectations, not recent use) and the third hypothesis was supported (i.e., targeted communication demonstrated larger path coefficients than the other predictor variables). Such findings have implications for practical applications of parent-child communication in preventing AOD use.

The Contributions of Targeted Parent-Child Communication about Alcohol

The findings provide support for the claim that a more sophisticated conceptualization and measurement of parent-child communication is needed when examining parental efforts to prevent adolescent alcohol use and abuse. Indeed, although frequency of parent-child

[1]The authors thank an anonymous reviewer for the suggestion to conduct this post-hoc analysis.

communication about alcohol and general openness in parent-child communication may be associated with expectations regarding alcohol consumption, these variables are limiting when examining alcohol use and do not account for the messages that are exchanged in the talk itself (i.e., assessing content dimensions). To adequately understand the predictive power of parent-child communication about alcohol to impact behaviors such as alcohol use, it seems particularly important to assess the strategies and content of the alcohol-specific targeted conversations.

These findings suggest that, perhaps, teaching parents to engage in targeted parent-child communication about alcohol may be optimal when seeking to prevent adolescent alcohol use. This adds to past qualitative findings in Miller-Day and Dodd's (2004) interview study with college students. Frequency of parent-child communication about alcohol and general openness in parent-child communication may influence youths' perceptions of alcohol use and its consequences, but a more detailed and complex parent-child communication where parents specifically address the topic of alcohol may be more influential in determining actual behaviors.

The results of this study support a more complex view of communication than is commonly represented in the parent-child drug prevention communication literature as revealed in Miller-Day's (2006) review. It appears that the three constructs - frequency of parent-child communication about alcohol, openness of general parent-child communication, and targeted parent-child communication about alcohol - represent related but distinct elements. It is not clear whether targeted parent-child communication about alcohol completely negates the necessity for evaluating general openness in parent-child communication or frequency of non-specific talk about alcohol. Yet, from this study and others' it can be argued that unless parents and children communicate openly and frequently in general, conversations about alcohol are not only less like to occur but, as well, less likely to be effective (Baxter, et al. 2005; Miller-Day & Dodd, 2004; Miller-Day, 2002, 2008) Features of the long-term parent-child relationship such as openness in parent-child communication would likely affect parent-child interactions such as drug talks, but these are distinct concepts and should be treated so in drug prevention communication research.

Limitations

Although the current study contributes to past research on parent-child communication among youth, it is not without its limitations. First, the data are cross-sectional; therefore, this study was unable to assess fully the predictive validity of targeted parent-child communication about alcohol. Longitudinal data would allow for stronger claims regarding the directionality of the arrows in the current study's path analysis. Because this study includes only cross-sectional data, the direction of the arrows could be flipped, where frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol are outcomes instead of predictors. Parents may communicate with their offspring about alcohol as a reaction to discovering that their offspring already have positive expectancies about alcohol or already consume alcohol. This study takes a prevention perspective, concentrating on frequency of parent-child communication about alcohol, general openness in parent-child communication, and targeted parent-child communication about alcohol as a way to prevent alcohol use and abuse. Nevertheless, research in the future should allow for alternative models using longitudinal data to test for parents engaging in communication with their offspring as a result of their offspring having positive expectancies about alcohol or having engaged in prior alcohol consumption.

Another limitation to this study is in the small effect sizes for positive expectancies about alcohol use and recent alcohol use. The effects sizes may be explained by the small percentage of youth who reported consuming alcohol (23% had part of a drink or more) and having positive

expectancies regarding alcohol consumption. Larger effect sizes are likely to emerge with greater reports of alcohol use frequency as the youth grow older. In the context of substance use among this particular age group (5th through 7th grade), these small effect sizes are similar to those in the field of substance use prevention among preadolescents and adolescents (Ennett, Tobler, Ringwalt, & Flewelling, 1994; Tobler & Stratton, 1997). In addition, small effect sizes should not be disregard in situations such as this, where the study's primary focus involves great consequences such as substance abuse and other high risk behaviors (Prentice & Miller, 1992).

Lastly, this study is limited by its exclusion of the parents' perspective regarding their communication with their adolescent children. From a systems theory perspective (e.g., Whitchurch & Constantine, 1993; Yerby, 1995), family members are interdependent; therefore, the family system can be understood by acknowledging parents instead of focusing only on the offspring. Including parents' perceptions of their communication and how it influences their offspring's alcohol expectancies and use would allow for an assessment of any discrepancies between parents and their offspring. Such discrepancies are likely to have a substantial impact on youths' health outcomes if parents believe their communication about alcohol is adequate or competent, while their offspring consider it minimal or incompetent.

Practical Applications

A significant contribution of this study was the support for a multifaceted conceptualization of parent-child communication that incorporates message-specific dimensions of "alcohol talks" as well as considering the frequency and openness of more general parent-child communication interactions. This required the development and evaluation of a new measure of targeted parent-child communication about alcohol (TPCCA). This conceptualization and measure should prove useful in future, etiological studies of adolescent AOD use. The extension of TPCCA to include better measurement of less direct strategies (thus, providing an even broader conceptualization of drug talks that incorporates elements of process) may improve the predictive power of this formulation even further.

At the same time, the knowledge generated by this study has direct application. Parent-based prevention programs and family strengthening programs would benefit from utilizing the TPCCA when conducting base-line assessments of parent-child communication about alcohol. This measure can serve as a baseline assessment tool (assessing what strategies parents are using to convey anti-drug messages before an intervention) or in conjunction with program evaluation (how might program content have impacted parental communication).

More importantly, perhaps, the findings inform the content of these interventions. Programs that encourage parent-based intervention frequently provide little direction to parents beyond "Have a conversation with your kid." Some notable exceptions include the "Sound OFF!" campaign, which was designed to encourage and reinforce parent-child communication about alcohol use (Perry et al., 2002), Turrisi et al.'s (2007) work with college students' parents intended to target binge drinking behaviors, and the Strengthening the Family corpus of programs designed to bring high risk youth and their parent(s) together for workshops and relationship building (Brody, Flor, Hollett-Wright, & McCoy, 1998; Brody et al., 2005). These parenting programs are among the few that provide more detailed directions for parents in regard to how and when they should talk to their children about alcohol consumption.

Family prevention interventions might develop curriculum to illustrate ways of communicating messages represented in the TPCCA. For instance, the *keepin' it REAL* drug prevention program (Hecht, Graham, & Elek, 2006; Hecht & Miller-Day, in press) is in the process of developing curriculum for 7th grade youth and their parents based on the TPCCA. This program is developing content to help parents communicate their expectations about AOD use clearly

while being receptive to their adolescent's views. One lesson will focus on ways that parents and adolescents can access media such as the internet and television to seek and discuss information about the dangers of alcohol use. This program is considering producing written materials including posters highlighting the messages represented by the TPCCA and disseminating these materials to parents in the school districts participating in the program.

The results of this study suggest that prevention scholars might be well served to examine parental efforts in more precise ways than merely assessing frequency of parent-child communication about a substance and/or general openness in their communication. Family strengthening programs almost routinely include activities and materials to nurture trust and openness in the flow of information between parent and child, but when addressing issues of protecting children from substance use, more direct content may be warranted. Miller-Day and Dodd (2004) found that integrating drug talks frequently across a child's developmental course may be the most efficacious approach for parents to take. Yet, more recent work by Miller-Day (2008) suggests that efficacy of parental efforts may vary according to family communication environments. For example, "consensual family environments" are characterized as open to discussing ideas and expressing opinions but family members are expected to ultimately agree with the opinion of those in positions of power such as parents. Youth in these families reported significantly more targeted parent-child communication about AOD, establishment of no tolerance rules, and provided rewards for nonuse than in other family environments. In contrast, youth from "laissez-faire family environments"—characterized as having low levels of engagement and also minimal requirements for compliance to those in a position of power --reported less targeted parent-child communication and more indirect or hinting strategies.

Additional research is needed to untangle the variables that contribute to the most successful model for parent-child alcohol use prevention communication. As a prevention (prior to experimentation) method, does targeted communication work equally well as in response to adolescent drinking? Is open communication more likely to produce targeted communication, and is targeted communication more or less effective with certain family communication styles? This present study makes a significant contribution by providing a valid and reliable measure representing the complexity of targeted parent-child communication about alcohol and clarifying the kind of parent-child communication most likely to reduce adolescent drinking.

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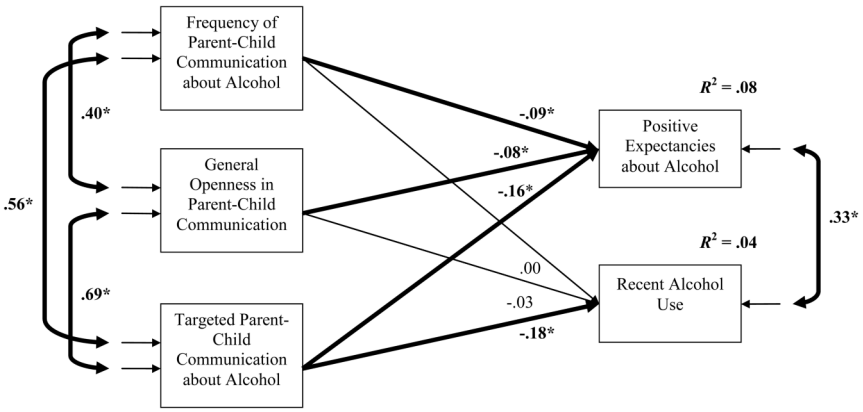

Figure 1.

Path Analysis to Assess Concurrent Validity

Note: Path coefficients in the figure are standardized. All significant (p <.05) paths are highlighted by boldface and marked by asterisks. To control for program effects, paths were drawn from a dummy-coded variable, representing the control and program conditions, to each variable in this model.

Table 1

Mean, Standard Deviation, and Bivariate Correlations for the Variables

Factor	*M*	*SD*	FPCA	GEN	TPCCA	EXP	ALC
FPCA	3.47	1.28	—				
n			1296				
GEN	3.64	.986	.395**	—			
n			1227	1289			
TPCCA	3.64	.993	.558**	.692**	—		
n			1130	1161	1182		
EXP	1.70	.904	−.203**	−152**	−252**	—	
n			1281	1277	1169	1384	
ALC	1.41	.955	−.113**	−152**	−204**	.383**	—
n			1177	1175	1076	1262	1279

Total $N = 1407$,

** $p < .01$ (two-tailed).

Note. FPCA = frequency of parent-child communication about alcohol, GEN = general openness in parent-child communication, TPCCA = targeted parent-child communication about alcohol, EXP = positive expectancies regarding alcohol, and ALC = recent alcohol use.

Table 2

Targeted Parent-Child Communication about Alcohol Scale (TPCCA)

How much do you agree with the following for at least one of your parents? At least one of my parents:
1. …Has not directly talked with me about alcohol use, but has given hints that I should not use.
2. …Has lectured me or given me a speech about drinking alcohol.
3. …Has warned me about the dangers of drinking alcohol.
4. …Has talked to me about how to be handle offers of alcoholic drinks.
5. …Has given me rules to obey about drinking alcohol.
6. …Will make a comment about how drinking alcohol is bad if a character on TV is drinking or drunk.
7. …Tells me stories of people who drink alcohol or have been drunk.
8. …Tells me he or she would be disappointed in me if I drink alcohol.
9. …Shows me information on the web, TV, or in the news about the dangers of drinking alcohol.
10. …Asks about my thoughts and opinions about drinking alcohol.

Note: For the analyses, item TPCCA1 was excluded from the scale based on inter-item correlations and EFA.

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Table 3

Inter-item Correlations of Parent-Child Communication Measures

	PCFA1	GOPC1	GOPC2	GOPC3	TPCA1	TPCA2	TPCA3	TPCA4	TPCA5	TPCA6	TPCA7	TPCA8	TPCA9	TPCA10
PCFA1	—													
GOPC1	.374	—												
GOPC2	.328	.635	—											
GOPC3	.302	.583	.566	—										
TPCA1	**.102**	**.261**	**.291**	**.270**	—									
TPCA2	.484	.462	.455	.472	**.309**	—								
TPCA3	.466	.507	.521	.480	**.329**	.590	—							
TPCA4	.497	.523	.496	.497	**.315**	.615	.711	—						
TPCA5	.393	.437	.440	.441	**.271**	.546	.591	.669	—					
TPCA6	.404	.457	.438	.455	**.260**	.499	.552	.592	.578	—				
TPCA7	.361	.384	.398	.390	**.228**	.494	.439	.522	.512	.576	—			
TPCA8	.426	.480	.443	.459	**.245**	.491	.652	.616	.580	.566	.506	—		
TPCA9	.408	.429	.382	.457	**.242**	.491	.496	.539	.473	.578	.532	.540	—	
PCA10	.506	.516	.473	.510	**.253**	.552	.595	.682	.589	.612	.564	.581	.680	—

Note. PCF = parent-child communication frequency about alcohol, GPC = general openness in parent-child communication, PCA = targeted parent-child communication about alcohol.