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Questions and Reflections: The Use of Motivational Interviewing Microskills in a Peer-Led Brief Alcohol Intervention for College Students

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Abstract

The purpose of this study was to examine the association between peer facilitator adherence to motivational interviewing (MI) microskills and college student drinking behavior. First year students ($N=67$) took part in a Brief Alcohol Screening and Intervention for College Students (BASICS) led by peer facilitators trained in MI and BASICS. Participants were assessed pre- and 2 weeks post-intervention on contemplation to change, as well as, pre- and 3 months post-intervention on drinking quantity. Independent coders used the Motivational Interviewing Treatment Integrity scale (MITI, Moyers, Martin, Manuel, & Miller, 2003) to evaluate therapist MI adherence. Peer facilitators met beginning proficiency in MI on scores of empathy, the ratio of MI adherent behaviors to non-adherent behaviors and the ratio of open questions to total questions as defined by the MITI. Results indicated that a higher number of closed questions was related to less contemplation and a higher number of open questions was related to more contemplation post intervention. A higher number of simple reflections was associated with increased drinking at the 3 month assessment, however, complex reflections were found to attenuate the effect of simple reflections on changes in drinking. These findings highlight the importance of competent reflective listening skills and the need for continual training and supervision for peer facilitators.

Drinking among college students is a prevalent activity that poses risks to individual health and safety, as well as to community well-being. Over 80% of college students report drinking alcohol in the past year and over 40% engage in heavy drinking (Johnston, O'Malley, Bachman, & Schulenberg 2005; Wechsler, Lee, Kuo, & Lee, 2000). College students are at risk for experiencing a variety of negative consequences that may have both short- and long-term detrimental effects (Hingson, Heeren, & Wechsler, 2005; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Perkins, 2002). To address these risks, many preventive intervention programs have been developed to abate the problem of high-risk drinking among college students (for reviews see Larimer & Cronce, 2002; Walters & Bennett, 2000). Evaluation of these programs is necessary for understanding and further developing efficacious interventions that can be implemented on college campuses across the country. The purpose of the present study is to examine the Brief Alcohol Screening and Intervention for College Students program (BASICS: Dimeff, Kivlahan, & Marlatt, 1999)

using a process level approach to specifically investigate how the peer facilitator use of questions and reflections within a motivational framework is related to participant outcome.

Brief Alcohol Screening and Intervention For College Students (BASICS)

Recent reviews of college student drinking prevention and intervention have highlighted programs found to be efficacious. These reviews also point to core intervention components related to effective treatment. Many of the college programs, such as the Alcohol Skills Training Program (Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1990), BASICS (Dimeff et al., 1999), and Risk Skills Training Group (D'Amico & Fromme, 2000), found to be efficacious utilize a combination of cognitive behavioral skills training and motivational enhancement (Larimer & Currence, 2002). One highlighted program, BASICS, has been recognized by Substance Abuse and Mental Health Services Administration (SAMHSA, 2005) as a model program for its efficacy. The BASICS program was developed based on evidence from one study that demonstrated that an individual brief motivational intervention involving the components of the ASTP (Kivlahan et al., 1990) was as effective in reducing young adult drinking as a 6-week long alcohol education and discussion group (Baer et al., 1992). Since then, BASICS, and interventions adapted from BASICS, have been shown to be efficacious in reducing drinking rates, frequencies, and related problems in general college student drinkers (Murphy et al., 2001), heavy drinking college students (Borsari & Carey, 2000; McNally, Palfai, & Kahler, 2005; Murphy et al., 2004), high risk college freshmen (Marlatt et al., 1998), fraternity members (Larimer et al., 2001), and college students mandated to intervention (Borsari & Carey, 2005; White, 2006). These studies have also demonstrated that BASICS can have treatment effects both before 1 year follow up (Borsari & Carey 2000, 2005; Murphy et al., 2001; 2004; White, 2006) and at or after 1 year (Baer et al., 1992; Baer, Kivlahan, Blume, McKnight, & Marlatt, 2001; Larimer et al., 2001; Marlatt et al., 1998). In addition, some of these studies have also established that students randomized to a BASICS intervention show statistically significant reductions in drinking and related problems relative to students randomized to an assessment only control condition (Larimer et al., 2001, Marlatt et al., 1998; McNally et al., 2005).

In a BASICS session, students receive feedback about their own drinking, their perceived norms, actual norms, and students discuss strategies for abstaining, reducing use, and preventing harmful consequences that can be incurred while drinking. While cognitive behavioral skills serve to modify beliefs and behaviors related to high risk drinking, the incorporation of motivational enhancement techniques focuses on exploring and developing reasons for changing the target behavior.

Motivational Strategies For Eliciting Change

The process of change has been classified into five discrete, empirically supported categories: precontemplation, contemplation, preparation, action, and maintenance (Prochaska & DiClemente, 1991). In a study by Vik, Culbertson, & Sellers (2000), 67% of college binge drinkers were classified as precontemplative, or unaware of a need to change, despite the fact that a majority of the students in this group had engaged in careless (e.g., arguing with a friend) or reckless (e.g., driving while intoxicated) behavior while drinking.

According to Miller and Tonnigan (1996), shifts in motivation for behavior change toward more moderate drinking are likely to result when the negative consequences of drinking outweigh the benefits. One aim of alcohol interventions using motivational strategies with college students is to increase contemplation, that is, increase the acknowledgement of a need to reduce alcohol use, before these negative consequences are incurred. To address this lack of desire to change drinking habits, all of the components of the BASICS are delivered with motivational interviewing (MI) as the therapeutic style. MI is described as a client-centered, directive method for enhancing intrinsic motivation to change by developing discrepancy, and exploring and resolving client ambivalence (Miller & Rollnick, 2002). MI is non-confrontational in nature, and may be especially appropriate for heavy drinking college students, many of whom are experimental social drinkers, non-treatment seeking, and possibly defensive about changing their drinking habits (Lawendowski, 1998; Miller, 1983; Tober, 1991;). Using MI, the therapist selectively chooses specific questions and reflective statements, MI microskills, that direct the conversation toward behavior change and allow students to explore their mixed feelings about alcohol (Gintner & Choate, 2003; Walters & Baer, 2005).

QUESTIONS

Questions can be asked in a closed structure within which the client can respond in a very restricted manner (e.g., “yes”, “no”, or “5 days”). Questions can also be asked in a more open structure, allowing for a wider range of answers. Open questions may serve as “door openers” (Miller & Rollnick, 2002, p. 67) by allowing students to do most of the talking and to play a more active part in defining the topics of exploration which are most relevant to them (Gintner & Choate, 2003). Using more open questions rather than closed questions is a therapist skill serving to bring more issues to light for the precontemplative student, while maintaining a collaborative process of information exchange. This skill may also be more likely to evoke factors related to problem drinking for the contemplative student (Gintner & Choate, 2003). Catley et al. (2006) found that the use of more open questions by the therapist was related to a better interaction score between the client and the therapist and showed a trend towards increases in change talk (verbal expressions of interest in or reasons for change). Additionally, it has been suggested that, on average, when more closed questions than open questions are asked, closed questions are indicative of negative client outcomes (Thrasher et al., 2006). While both strategies are useful for eliciting information, beliefs, and feelings, open questions are preferable to closed questions because they allow for the student to become more engaged in sharing information and evaluating their own lifestyle and decisions (Baer & Peterson, 2002).

REFLECTIONS

Another strategic motivational approach involves the use of reflective statements, a “challenging skill” (Miller & Rollnick, 2002, p. 67) that is a form of hypothesis testing used to uncover the meaning of client statements. Like questions, there are two ways of classifying reflections based on their structure. Simple reflections usually involve repeating or rephrasing a client’s statement, and are often used to help the therapist understand the student’s model of the issues at hand (Gintner & Choate, 2003). Complex reflections provide a more in-depth interpretation of a client’s statement by substituting new words for

what the client has offered or by making a guess at the unspoken meaning (Miller & Rollnick, 2002). Although reflective listening can be extremely powerful in expressing empathy and shedding a new light on topics for the client, it can also be frustrating for therapists when reflective statements of insufficient depth deprive the conversation of direction (Miller & Rollnick, 2002). Therefore, skillful reflecting may not only be important in changing drinking behavior, but it may also be necessary for the maintenance of a collaborative interaction between the student and therapist. Skillful reflections can be used as a means of understanding the client's viewpoint, rolling with resistance, and highlighting discrepancies between the target behavior and the client's values (Gintner & Choate, 2003).

Motivational Interviewing Treatment Integrity (MITI)

Various coding and rating systems have recently been developed to evaluate therapist behaviors in order to assess the therapist's delivery of MI. Questions, reflections, other behaviors, and other global measures of competence are measured by these coding and rating systems (for a review see Madson & Campbell, 2006). The Motivational Interviewing Treatment Integrity (MITI: Moyers, Martin, Manuel, & Miller, 2003) scale was developed from the Motivational Interviewing Skills Code 2.0 (MISC: Miller, Moyers, Ernst, & Amrhein, 2003) as a simplified tool for evaluating entry-level competence in the use of MI (Moyers, Martin, Manuel, Hendrickson, & Miller, 2005). The MISC has been shown to measure levels of MI competence (Miller et al., 2003) and the relationship between interpersonal skill and client collaboration (Catley et al., 2006; Moyers, Miller, & Hendrickson 2005;). A derivative of the MISC, the Sequential Code for Observing Process Exchange (SCOPE: Moyers & Martin, 2006) has demonstrated the increased likelihood of client change talk following MI-consistent therapist behavior, as well as therapist behaviors (questions, reflections, giving information and feedback) prescribed by but not unique to MI. The MISC has also been shown to be useful in assessing the relationship of these therapist behaviors to client outcomes (Thrasher et al., 2006). The MISC measures multiple and specific constructs representing therapist competence, therapist behaviors, client behaviors, and the quality of the interaction between the therapist and the client, while the MITI focuses solely on the therapist. The MITI utilizes constructs of competence and specific behaviors that were collapsed from the MISC in order to simplify the assessment of the therapist's use of MI while remaining an effective evaluation of treatment integrity. Moyers et al. (2005) reported that the inter-rater reliability estimates of the global and behavioral ratings of the MITI were reliable, with 70% of all ratings found to be in the "excellent" range and the global ratings in the "fair" range according to Cicchetti (1994).

While the efficacy of BASICS has been established for reducing heavy drinking and negative consequences among college students, the integrity of MI delivery and the impact of integrity on outcomes have not yet been evaluated. The MITI coding system may be used to evaluate the relative contribution of questions and reflections, the quality of the intervention delivery, as well as the therapist behaviors that are related to changes in both contemplation and actual drinking. This information may aid in the improvement of interventions in future research studies and practice.

Present Study

The purpose of this research was to assess the integrity of peer facilitator delivery of MI in BASICS, as implemented at one college campus, and to evaluate changes in drinking as a function of two kinds of peer facilitator behaviors: questions and reflections. We were interested in whether changes in contemplation and drinking varied as a function of closed and open questions, such that the excessive use of closed questions would be related to decreases in contemplation and increases in drinking and the use of open questions would be related to increases in contemplation and decreases in drinking. We also were interested in whether higher level questions (i.e., open questions) might moderate the hypothesized counter-therapeutic relationship between lower level questions (i.e., closed questions) and outcomes. Similarly, we were interested in examining changes in contemplation and drinking as a function of simple and complex reflections. We hypothesized that the excessive use of lower level reflections (i.e., simple reflections) would be related to decreases in contemplation and increases in drinking while the use of higher level reflections (i.e., complex reflections) would be related to increases in contemplation and decreases in drinking. We were also interested in evaluating whether the use of complex reflections might moderate the hypothesized counter-therapeutic relationship between simple reflections and these outcomes.

Method

PARTICIPANTS AND PROCEDURE

Participants included 67 (Mean Age = 18.34, $SD=0.48$; 59% female; 67% White, 16% Asian, 17% Other/Missing) first-year university students participating in a larger longitudinal study on the efficacy of five alcohol education programs. Approximately three thousand ($N=3137$) randomly selected first-year students were invited to participate in an online screening survey about alcohol use and consequences, and to see if participating in a larger study might be right for them. Approximately 47% ($N=1478$) of those invited completed the screening questionnaire. Participants meeting eligibility criteria for the larger study (i.e., consuming 4+ for females /5+ for males drinks on at least one occasion in the last 30 days) were invited to the larger study.

Students invited to the longitudinal study completed a baseline assessment (637 of 709 invited) and were then randomly assigned to one of six conditions (five alcohol interventions or a control, assessment-only condition). For the present study, only participants randomized to the BASICS intervention ($n=106$) are included. Students scheduled a BASICS session online after completing the baseline survey. Seventy-eight students attended a BASICS session. Students met with a trained undergraduate or graduate peer BASICS facilitator for a 60 minute confidential session about alcohol's effects, the pros and cons of alcohol use, and alcohol-related skills. BASICS sessions were videotaped. Students completed a post-intervention satisfaction questionnaire and a three month follow-up survey. Participants were paid \$10 for screening, \$25 for baseline, \$10 for post-test satisfaction, and \$30 for 3-month follow-up surveys. Of the 78 who attended a session, 67 had usable videotapes. Fifty-eight participants had baseline, MITI, and post-test satisfaction data while 53 participants had baseline, MITI, and 3-month follow-up data and were used in the present study. The

Institutional Review Board where this study was conducted provided approval for all aspects of this research.

BASICS FACILITATORS

Three undergraduate and three graduate students served as peer facilitators. All facilitators attended intensive training workshops conducted by experienced clinical psychologists specializing in the field of brief interventions and college student drinking. Workshops consisted of a complete review of the BASICS manual, a review of MI, the integration of MI into the content of the intervention, videotaped examples of the intervention, and practice exercises. After successful completion of the workshop, all peer facilitators attended weekly follow-up trainings for one academic quarter in which MI skills were further developed and the discussion format of the content was practiced through repeated role plays. At the end of the quarter-long training period, each facilitator completed a series of pilot sessions which were recorded and reviewed by the principal investigators. Each facilitator needed to demonstrate proficiency in MI and BASICS content (as deemed appropriate by the principal investigator) before being approved to serve as a study peer facilitator and beginning to see research participants. Upon completion of training and initiation of the interventions, facilitators attended weekly supervisions conducted by the principal investigators and Ph.D. level graduate students in which recorded sessions were watched, discussed, and constructive feedback was provided.

CODING PROCEDURES

Of the 78 sessions, 11 sessions were not recorded because of technical difficulties leaving 67 BASICS sessions with usable video tapes available for coding using the MITI (Moyers et al., 2003). Six trained graduate and undergraduate students coded 20-minute randomly selected segments of each session. Sessions were coded based on behavior counts and overall scores. Behavior counts included giving information, the number of closed and open questions asked, the number of simple and complex reflections made, and the number of MI adherent and MI non-adherent statements made. Global measures of overall peer facilitator empathy and MI spirit of the session were assessed on a 7-point Likert scale with 7 being of the highest quality.

Coder Training—Coders were five undergraduates and one graduate student at the University of Washington. Coders attended a training session in the use of the Motivational Interviewing Treatment Integrity (MITI) coding system conducted by the first author of the MITI manual (Moyers et al., 2003). Readings (Miller & Rollnick, 2002) and videotapes (Miller, Rollnick, & Moyers 1998) were used to familiarize coders with the clinical method of MI. Coders then proceeded through a series of graded learning tasks such as the parsing of peer facilitator utterances, coding specific behaviors exemplifying MI adherence, and assessing global dimensions of MI spirit and empathy. Competence in one level was required before proceeding to the next learning task (Moyers et al., 2003). Inter-rater reliability among the six coders across MITI items was high ($\alpha = .93$). For the purposes of the present study, only the behavioral counts involving questions and reflections were utilized. Inter-rater reliability for these behavior counts are as follows: closed questions ($\alpha = .74$), open questions ($\alpha = .69$), simple reflections ($\alpha = .68$), and complex reflections ($\alpha = .87$).

MEASURES

Closed and Open Questions—Closed questions included the number of yes/no questions that were asked in the twenty minute session. These also included questions with answers in a restricted range. Open-ended questions are questions that are designed to elicit open-ended responses. Coders were instructed to tally each time a closed or open ended question was asked. The sums of all closed and open-ended questions were computed for the twenty minute session.

Simple and complex reflections—Simple reflections included the number of statements made by the facilitator which conveyed understanding or facilitated verbal exchanges, but added very little or no meaning to what the client had said. Complex reflections included the number of statements made by the facilitator which added substantial meaning or emphasis to what the client had said. Complex reflections convey a deeper meaning to the picture the client is developing. As with questions, coders were asked to keep a tally of how many simple and complex reflections the facilitator made in the twenty minute segment. The sums of all simple and complex reflections were computed and used in the analyses.

Alcohol Use—The Daily Drinking Questionnaire (Collins, Parks, & Marlatt, 1985) was utilized to assess the typical number of total drinks consumed per week. The total number of drinks per week was used as the outcome variable. Participants were asked to indicate how many standard drinks they typically consumed on each day of the week during the previous three months. The numbers of drinks consumed on each day of the week were summed.

Readiness to Change—The Readiness to Change scale (Rollnick, Heather, Gold, & Hall 1992) was used to assess motivation or readiness to reduce alcohol use behaviors. The measure is designed to identify participant stage of readiness to change (Prochaska & DiClemente, 1991), identifying 3 stages Precontemplation (e.g., “I don’t think I drink too much”), Contemplation (e.g., “My drinking is a problem sometimes”), and Action (e.g., “I have just recently changed my drinking habits”). The response format ranged from –2=strongly disagree to 2=strongly agree. The four items for each stages of change were averaged creating three readiness to change scales. For the purpose of this study, only the contemplation scale was used subscale ($\alpha = .82$).

Results

MEAN COMPARISONS

Independent samples t-tests were conducted to compare the sample of students who participated in the BASICS program to the rest of the overall baseline sample. Paired sample-t-tests evaluated changes in contemplation and outcomes among BASICS participants. One sample t-tests were used to evaluate proficiency of peer facilitator MI skills. For independent sample t-tests, effect size (d) was calculated as the difference between sample means divided by the pooled standard deviation (Cohen, 1988). For paired sample t-tests, effect size (d) was calculated as the difference between pre and post scores divided by the standard deviation of the difference (Cohen, 1988). For one-sample t-tests,

effect size (d) was calculated as the difference between the sample mean and the test value divided by the standard deviation of the sample mean (Cohen, 1988).

Independent sample t-tests revealed that there was a statistically significant difference in the number of drinks consumed per week, $t(1385) = -3.85$, $p < .01$, $d = 0.39$, with students screened into the BASICS condition ($M = 8.03$, $SD = 6.40$) drinking more than the rest of the overall baseline sample ($M = 4.25$, $SD = 9.69$). Paired sample t-tests revealed that students completing the BASICS program and follow-up assessments showed statistically significant increases in contemplation from baseline ($M = -0.90$, $SD = 0.72$) to post-intervention ($M = -0.50$, $SD = 0.66$, $t(58) = -4.73$, $p < .05$, $SD_{diff} = 0.65$, $d = 0.62$) and statistically significant reductions in drinking from baseline ($M = 9.28$, $SD = 6.41$) to 3-month follow up ($M = 7.32$, $SD = 6.87$, $t(52) = 2.18$, $p < .05$, $SD_{diff} = 6.55$, $d = 0.30$).

Analyses were conducted to evaluate peer facilitator adherence based on conventional standards described in the MITI manual (Moyers et al., 2003). Table 1 presents the average scores and percentages of peer facilitator skills compared to the standard levels of beginning proficiency and competence. With respect to global ratings, a one-sample t-test revealed that spirit was lower than the conventional criteria for beginning proficiency (5.0), $t(66) = -2.02$, $p < .05$, $d = .25$. In addition, a paired-samples t-test revealed that spirit was statistically significantly lower than empathy, $t(66) = -2.49$, $p < .05$, $d = 0.30$. In contrast, peer facilitators exhibited beginning proficiency for empathy with scores that were not significantly different than 5.0, $t(66) = 0.06$, $p = ns$. Paired samples t-tests indicated that open and closed questions were asked by peer facilitators with similar frequency, $t(66) = 0.33$, $p = ns$, whereas peer facilitators made simple reflections more frequently than complex reflections, $t(66) = 5.49$, $p < .001$, $d = 0.67$. On average, peer facilitators achieved beginning proficiency on three of the six quality measures.

CORRELATIONS

Table 2 presents means and correlations for baseline and follow-up drinking, closed and open questions, and simple and complex reflections. Baseline contemplation and post-intervention contemplation were strongly correlated, as were baseline drinking and drinking at 3-month follow-up. Baseline drinks per week was also strongly positively correlated with contemplation at baseline and post-intervention. The number of closed questions asked was positively associated with the number of open questions but the number of simple reflections and complex reflections were not related. In addition, simple reflections were positively related to open questions. Of the four peer facilitator behaviors, only simple reflections had a zero order relationship with contemplation and drinking behavior.

REGRESSIONS

The primary purpose of this paper was to evaluate changes in contemplation and drinking as a function of two kinds of peer facilitator behavior; questions and reflections. We examined changes in contemplation and drinking as a function of closed and open questions and their interaction. Next we evaluated changes in contemplation and drinking as a function of simple and complex reflections and their interaction. In both cases we used multiple regression analysis (Cohen, Cohen, West, & Aiken, 2003). Tolerance values below .16 or .

17, variance inflation factors exceeding values of 6 or 7, and condition indices above 30 are considered problematic for regression analyses (e.g. Cohen, Cohen, West, & Aiken, 2003; Muruyama, 1998). In no case did tolerance, variance inflation, or condition indices approach problematic levels in the regression analyses presented below. For regression results, effect sizes (d) were calculated using the formula $d = 2t / \sqrt{df}$ (Rosenthal and Rosnow, 1991). In each case we were interested in both main effects and interactive effects of peer facilitator behaviors on changes in drinking. Predictors were mean centered to facilitate interpretation of parameter estimates. Statistically significant interactions were evaluated using procedures described by Aiken and West (1991).

Changes in contemplation and drinking as a function of closed and open questions—

To examine changes in contemplation as a function of closed and open questions we conducted hierarchical multiple regression to evaluate contemplation post-intervention and included baseline contemplation as a covariate at step 1. Open questions and closed questions were added at step 2 and their product term was added at step 3. Regression results are presented in Table 3. Results provided support for main effects of both closed and open questions on changes in contemplation. Closed questions were associated with a decrease in contemplation while open questions were associated with an increase in contemplation post intervention. There was no interaction among closed and open questions for changes in contemplation.

To examine changes in drinking as a function of closed and open questions we conducted hierarchical multiple regression to evaluate drinks per week at follow-up and included baseline drinks per week as a covariate at step 1. Open questions and closed questions were added at step 2 and their product term was added at step 3. Regression results are presented in Table 4. Results provided no support for either main effects or interactive effects of closed and open questions on changes in drinking.

Changes in contemplation and drinking as a function of simple and complex reflections—

We used the same approach to examine changes in contemplation as a function of simple and complex reflections. As seen in Table 5, results provided no support for either main effects or interactive effects of simple and complex reflections on changes in contemplation.

For changes in drinking as a function of simple and complex reflections, follow-up drinks per week were specified as the dependent variable and baseline drinks per week were entered as a covariate at step 1. Regression results are provided in Table 6. Results revealed that the use of more simple reflections was associated with increased drinking. There was no main effect of complex reflections but a statistically significant interaction suggested that complex reflections moderated the effect of simple reflections on changes in drinking. Fig. 1 presents predicted means derived from the regression equation where high and low values were specified as one standard deviation above and below the mean, respectively. Tests of simple slopes revealed a strong positive relationship, $\beta = .59$, $p < .001$, between simple reflections and increased drinking when coupled with fewer complex reflections. In contrast, in combination with more complex reflections, the relationship between simple reflections and drinking was relatively weak, $\beta = .22$, $p < .06$.

Discussion

This study examined peer facilitator integrity to MI in BASICS sessions and explored the relationship of peer facilitator questions and reflections to drinking outcomes. Peer facilitators, on average, met criteria for beginning proficiency, as defined in the MITI manual (Moyers et al., 2003) on empathy, percent MI-adherent statements, and percent open questions while they did not meet the criteria for proficiency on MI spirit, ratio of reflections to questions, or the percent of complex reflections. More closed questions asked by the peer facilitator were related to less student contemplation about changing drinking behavior while more open questions were related to an increase in contemplation post-intervention. Neither type of question related to changes in participant drinking. Reflections were not related to changes in contemplation. More simple reflections were related to increased rates of drinking at follow-up, but this relationship was attenuated by the use of more complex reflections.

Our sample of freshmen students who completed the baseline drinking survey were similar in number to the national average of 5.26 drinks per week among college freshmen as reported by the CORE Institute (2005). On average, the sample of students who were screened into the BASICS program drank more drinks per week than the overall sample. The consumption of more alcohol by BASICS participants is not surprising since these students were screened into the study as at-risk drinkers. Based on these data, this sample is representative of a level of drinking relevant for participation in a preventive intervention like BASICS to increase student contemplation of, and actual changes in drinking habits to a level that approaches the national norm.

On global ratings, peer facilitators were rated lower on MI spirit than the level they were initially required to achieve. However, the effect size was small and, although it is statistically significant, the difference between the average spirit rating and criteria for beginning proficiency was minimal. It is possible that once peer facilitators begin to see actual student participants, it may be challenging to maintain their ability to establish a collaborative relationship with the student that is conducive to the elicitation of change talk. This finding suggests that peer facilitators should be trained to adapt to the increased variability encountered when seeing numerous and diverse students.

Although peer facilitators were at a level of beginning proficiency on the ratio of open questions to total questions, there was still some need for improvement to achieve a level of competence required for MI. Our findings suggest that questions, whether they were closed or open, were not related to drinking rates at follow up, but asking more open questions and fewer closed questions was associated with increased contemplation about changing drinking habits. Previous research has shown that a more strategic use of questions, i.e. asking many more open questions than closed questions, was strongly related to positive client behaviors and outcomes (Catley et al., 2006; Thrasher et al., 2006). Although the relationship of peer facilitator questions to client outcomes remains unclear, causal mechanisms of change from MI may come from other, more complicated peer facilitator behavioral repertoires, such as interpersonal skills (Moyers, Miller, et al., 2005) and specific in-session behaviors, such as affirming and reflective listening (Thrasher et al., 2006).

Peer facilitators were least proficient in their use of reflective statements. Using complex reflections, along with wording and timing them appropriately, may present a challenge for peer facilitators with minimal experience in a non-didactic, one-on-one context. It is evident from our data that the use of simple reflections in the absence of complex reflections is related to counter-therapeutic outcomes. Simply repeating and rephrasing participant statements without the balance of other interpersonal skills may make the participant more likely to disengage from the conversation. Catley et al. (2006) found that more reflections were associated with a higher interaction score between the therapist and client and more client change talk, although they did not differentiate between simple and complex reflections. This study supports previous findings that the relative frequencies of more skillful vs. less skillful counselor statements are related to client change processes. A recent review has noted that effects attributable to MI are measurable for up to one year, but its effect is strongest from 0 – 1 month after intervention and then diminishes greatly after the first month of follow-up (Hettema, Steele, & Miller, 2005). Although Hettema et al. (2005) found that the effects of MI remain for up to 1 year, our findings on the use of reflections and questions highlight the importance of not only evaluating MI adherence (e.g. using a certain number of complex reflections per number of simple reflections), but also evaluating MI competence (e.g. skillfully using reflections to demonstrate understanding and elicit change talk) in order to potentiate its effect. Our findings suggest that certain peer facilitator behaviors, although not considered MI non-adherent, can serve as indices for the ineffective employment of MI microskills.

An important consideration, not addressed by the use of the MITI, is the function and the content of counselor statements in relation to the goal of the intervention. For example, although open questions were related to increases in contemplation, contemplation remained negative (still in disagreement with contemplation statements) post intervention. This finding suggests that there is room for improvement, on the part of the peer facilitator, to increase contemplation to change in student drinkers. It is possible that peer facilitator questions directing students to talk about change may also increase contemplation to change. This relationship is only indirectly assessed when examining the influence of the structure of questions. Additionally, it is possible that the content of reflections may also affect the student's subsequent behavior. Reflective listening is a skill that allows the counselor to demonstrate an in-depth understanding of the meaning of a client's statement (Miller & Rollnick, 2002). It may be that it is not the structure of reflections, but rather, the lack of depth in the content of these reflections that reduces student involvement and contemplation of change. Change is less likely to happen if the peer facilitator is reflecting trivial statements made by the participant (e.g. "You drank 5 drinks") rather than statements related to motivating change (e.g. "After you spent the night in the hospital, you realized you're drinking had gone too far"). By only assessing for the structure of peer facilitator statements, we may have limited our ability to fully explore the relationship of higher level versus lower level MI microskills on contemplation and drinking frequency. This methodology may have contributed to the null findings on our hypotheses that questions would relate to drinking outcomes, reflections would relate to contemplation, and complex reflections would be related to reductions in drinking. In addition to examining the structure of peer facilitator statements, future research should address the role of the content of facilitator statements on

student change and directly assess the relationship between peer facilitator statements and in-session change statements made by the student.

Another important consideration when examining these interactions is the influence the participant may be having on the behavior of the peer-facilitator. Peer facilitators, being less experienced paraprofessionals, may find it more difficult to gauge where the student is in terms of readiness to change. Resistance behavior (e.g. interrupting, arguing, off-task responses, and negative responses) may be generated when a peer-facilitator does not take into account that the participant may not be contemplating change. It is possible that the peer facilitators may avoid exploring important topics with the student so as to prevent additional resistance behavior. This avoidance is actually not congruent with MI. Rolling with resistance entails reframing the client's resistance to generate momentum towards change (Miller & Rollnick, 2002). As a result, peer-facilitators may unknowingly use more closed questions to avoid those topics. Peer facilitators may also use more simple reflections because they are devoting more attention to preventing resistance rather than listening carefully to the student to identify the deeper meaning of student statements. These findings further stress the importance of examining the dynamic interaction between the peer facilitator and student participant by assessing both the student and the peer facilitator in-session behaviors.

The present study should be evaluated in light of certain limitations. Due to the use of correlational analyses, we cannot demonstrate that the peer facilitator behaviors related to outcomes were causal in nature. It is possible that other variables may influence this relationship. In addition, the MITI does not take into account other important process elements of MI, such as client statements, peer facilitator-client interactions, and the context in which the statements occur. The amount of information provided about the relationship between peer facilitator behaviors and client outcomes is restricted. In-depth process elements of MI may be better evaluated by the MISC, and a more recent derivative of the MISC, the SCOPE. Finally, peer facilitator microskills, such as the use of higher level questions and reflections, are peer facilitator behaviors that are not unique to MI. They are peer facilitator statements that, when used in a strategic manner, are conducive to the goals of MI. Therefore, they are not as much a measure of the quality of MI taking place during the session, but instead serve as behavioral measures that may be diagnostic of the inefficient employment of these strategies and are only indirectly related to the strategic implementation of MI principles. However, this final limitation may not be as relevant when evaluating MI proficiency of entry level peer facilitators.

The MITI is a valuable tool in assessing and improving foundational skills in MI. The competent use of these MI strategies may be a critical, preliminary step in developing the quality of MI delivery by peer facilitators. There are many advantages to the services provided by peer facilitators (Fromme & Corbin, 2004; Parkin & McKeganey, 2000) and a strong foundation in the use of questions and reflections may compliment these strengths. Future studies utilizing peer facilitators should emphasize training that specifically focuses on the use of open questioning to increase student exploration of reasons to change and on the use of reflective listening as a means of highlighting and amplifying the content that is

most valuable to the student while avoiding some of the possible deleterious effects of relying on more surface-level reflective statements.

This study provides evidence for the utility of the MITI in assessing the ability of peer facilitators to implement motivational interviewing microskills when conducting a BASICS session. Although peer facilitators reached levels of beginning proficiency on most of the MITI constructs, there remains room for improvement on all aspects of MI delivery, especially in the strategic utilization of reflective statements. Specifically, frequent practice of reflective listening should be considered in the training and supervision of peer facilitators delivering brief interventions. Training in the use of reflective statements should emphasize the value of using these statements in a more complex manner, i.e. hypothesis testing rather than repeating and relevant rather than trivial, to improve the quality of the MI delivery. In addition, peer facilitator training should also aim to improve MI delivery to a level of competency in order to maximize the advantages of using peer providers. This training would involve enhancing the peer facilitator's ability to interact with students in a manner related to the four principles of MI: expressing empathy, developing discrepancy, rolling with resistance, and supporting self-efficacy (Miller & Rollnick, 2002). Future research should focus on how peer facilitator behaviors are related to in-session student behaviors and examine the content of effective interactions in order to inform peer facilitator training. This study has demonstrated that the MITI is useful in indexing peer facilitator MI microskills in a way that reveals the effective and ineffective MI delivery of treatment components related to BASICS. However, as its authors have noted (Moyers et al., 2005), it is also evident that the MITI is limited in its ability to assess all the important elements of competency in motivational interviewing. Therefore, when training peer facilitators of the BASICS program in their use of MI, the MITI should be used as a supplement to more in-depth evaluations.

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FIGURE 1.

The relationship of simple reflections to follow-up drinks per week as a function of complex reflections.

Table 1

Achievement of MI quality benchmarks for competency and beginning proficiency prescribed in the MITI manual

Behavioral Indicator	Competency	Beginning proficiency	Average rating of peer facilitators
Empathy	6.0	5.0	5.0
Spirit	6.0	5.0	4.8
Reflections to questions ratio	2.0	1.0	0.45
Percent MI-adherent statements	100%	90%	98.7%
Percent complex reflections	50%	40%	35.7%
Percent open questions	70%	50%	49.4%

Table 2

Means, standard deviations, and zero-order correlations

Variable	M	SD	1	2	3	4	5	6	7	8
1. Baseline contemplation	-0.90	0.72	–							
2. Post-intervention contemplation	-0.50	0.66	.56***	–						
3. Baseline drinks/week	8.73	6.37	.34**	.37**	–					
4. Follow-up drinks/week	7.32	2.71	.22	.26	.52***	–				
5. Closed questions	12.86	4.28	.28*	.05	-.10	-.11	–			
6. Open questions	12.65	4.53	-.02	.24	.02	-.11	.29*	–		
7. Simple reflections	6.89	3.66	.22	.29*	.11	.29*	.02	.26*	–	
8. Complex reflections	3.97	2.71	.13	.16	-.10	-.11	.00	.18	.09	–

*Note.** $p < .05$,** $p < .01$,*** $p < .001$.

Table 3
Regression results for contemplation as a function of closed and open questions

Predictor	B	SE B	β	t	d
Step 1: $R^2=.31$					
Baseline contemplation	0.51	0.10	0.56	5.04***	1.34
Step 2: $R^2=.43$					
Closed questions	-0.04	0.02	-0.24	-2.08*	0.56
Open questions	0.05	0.02	0.34	3.07*	0.84
Step 3: $R^2=.43$					
Closed questions X open questions	-.001	.004	-.003	-.028	0.07

Note.

* $p<.05$,

*** $p<.001$.

Table 4

Regression results for drinking as a function of closed and open questions

Predictor	B	SE B	β	t	d
Step 1: R ² =.27					
Baseline drinks/week	0.55	0.13	0.52	4.30***	1.20
Step 2: R ² =.28					
Closed questions	0.00	0.20	0.00	-0.01	0.00
Open questions	-0.14	0.18	-0.10	-0.76	0.22
Step 3: R ² =.31					
Closed questions X open questions	-0.07	0.04	-0.20	-1.65	0.48

Note.

 $p<.001$.

Table 5
Regression results for contemplation as a function of simple and complex reflections

Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>d</i>
Step 1: $R^2=.31$					
Baseline contemplation	0.51	0.10	0.56	5.03***	1.34
Step 2: $R^2=.35$					
Simple reflections	0.03	0.02	0.17	1.52	0.41
Complex reflections	0.02	0.03	0.07	0.58	0.16
Step 3: $R^2=.35$					
Simple reflections X complex reflections	0.00	0.00	0.05	0.17	0.05

Table 6

Regression results for drinking as a function of simple and complex reflections

Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>d</i>
Step 1: $R^2=.27$					
Baseline drinks/week	0.55	0.13	0.52	4.30***	1.20
Step 2: $R^2=.33$					
Simple reflections	0.47	0.21	0.26	2.22*	0.63
Complex reflections	-0.18	0.29	-0.07	-0.62	0.17
Step 3: $R^2=.41$					
Simple reflections X complex reflections	-0.12	0.05	-0.32	-2.49*	0.72

Note.

* $p<.05$,

 $p<.001$.