

Brief article

Chasing change talk: The clinician's role in evoking client language about change

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Abstract

Client “change talk,” or language in favor of changing a target behavior, is a hypothesized active ingredient of motivational interviewing that can predict actual behavioral change. This study isolated and manipulated change talk in a context resembling a psychotherapeutic encounter, comparing its prevalence in two conditions: change talk evocation (CT) and functional analysis (FA). Using a single-baseline (ABAB) design, clinicians alternated between CT and FA, consequating change talk only in the CT condition. Clinicians were 9 clinical psychology graduate students, and clients were 47 undergraduates with concerns about drinking. The hypothesis that greater Percentage Change Talk would be observed in CT than in FA was supported, $t(46) = 6.561, p < .001, d = 1.19$. A rationale for the development of a behavioral rating system to evaluate clinicians' proficiency in recognizing, responding to, and evoking client change talk is presented. © 2010 Elsevier Inc. All rights reserved.

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1. Introduction

Numerous studies have supported the use of motivational interviewing (MI) and its adaptations for treating substance use disorders, showing that it is more effective than no treatment and at least as effective as other treatment methods (e.g., Dunn, Deroo, & Rivara, 2001; Hettema, Steele, & Miller, 2005; Vasilaki, Hosier, & Cox, 2006). MI also has been recognized as an empirically supported treatment of alcohol use disorders (e.g., Center for Substance Abuse Treatment, 1999; National Registry of Evidence-Based Programs and Practices, 2007). Despite its widespread use, the mechanisms by which MI operates are only partially understood.

Client “change talk,” or self-motivational speech in favor of changing a problematic behavior, is one hypothesized mechanism of action in MI (Miller & Rollnick, 2002). One

proposed causal chain (e.g., Miller & Rose, 2009; Moyers et al., 2007) suggests that change talk mediates the relation between MI-consistent clinician behaviors and improved client outcomes. In other words, clinicians, by evoking and strengthening client change talk, hold some influence over the real-world treatment outcomes of ambivalent clients.

Clearly, if change talk influences behavior change, then clinicians should focus their therapeutic efforts on attending to it. Furthermore, if clinicians concentrate on evoking change talk in place of other components of MI with unknown utility, then more efficient use of this treatment is likely to result. Perhaps even more important is the implication that clients hold the solutions to their problems—that they can actually talk themselves into change—and primarily need selective redirecting by their clinicians to enact meaningful changes. This client-centered perspective contradicts many approaches within the addiction treatment field that value the conveyance of knowledge or the instilling of arguments for change.

Despite these theoretical reasons to attend to change talk, it is possible that client language is simply a marker of other mechanisms of action for MI rather than an active ingredient

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itself. For example, perhaps clients who are highly motivated as they enter the treatment session are also more likely to offer change talk. Change talk, in that instance, would be a signal of future change rather than an actual cause of it.

If change talk is a true active ingredient in MI, then the following phenomena (Cook & Campbell, 1979) should be apparent: (a) Covariation: an association should be observed between clinician behaviors and change talk and between change talk and treatment outcomes; (b) temporal order: clinician behaviors should precede changes in change talk, and change talk should precede behavior change; and (c) experimental manipulation: clinicians should exhibit some direct influence on the expression of change talk by the client.

Past research has provided evidence for the first two conditions discussed in the preceding paragraph. Change talk has been reliably associated with improved client outcomes in substance abuse treatment (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003; Baer et al., 2008; Gaume, Gmel, Faouzi, & Daeppen, 2008; Miller, Benefield, & Tonigan, 1993; Moyers et al., 2007; Strang & McCambridge, 2004), and there is a small body of evidence linking MI-consistent clinician behaviors (such as affirming, emphasizing client control, supporting, and asking permission to provide information) with client change talk (e.g., Catley et al., 2006; Houck & Moyers, 2008; Moyers & Martin, 2006). As to the third condition, experimental manipulation, we are unaware of any study that has addressed the question of whether clinicians can actively and directly influence change talk during MI treatment sessions.

1.1. Purpose and objectives

The purpose of this study was to test directly the notion that clinicians can manipulate client change talk. To do this, we isolated an hypothesized active ingredient of MI (change talk evocation [CT]) and compared it with a non-MI element (functional analysis [FA]) in the context of a conversation about alcohol use similar to one that might occur in a therapy session. Using an ABAB design, we observed the frequency of client change talk as the two disparate therapeutic elements were employed and then withdrawn. We hypothesized that when clinicians used intentional strategies to evoke change talk, its frequency would increase, and similarly, when clinicians used other clinical interventions, the frequency of client change talk would decrease.

2. Method

2.1. Participants

2.1.1. Clients

All procedures were reviewed by the University of New Mexico (UNM) institutional review board before study initiation, and all participants gave informed consent before

participating. Clients were 47 undergraduate volunteers attending either of two institutions: UNM, a large, 4-year university, or Central New Mexico Community College (CNM), a 2-year college. The mean age of clients was 23.6 years ($SD = 7.2$ years, range = 18 to 56 years), and 45% were women. Clients identified as 4.3% African American/Black, 6.4% American Indian/Alaska Native, 2.1% Asian/Pacific Islander, 57.5% Hispanic (12.8% Mexican, 38.3% New Mexican/Spanish, and 6.4% other Latin American), and 59.6% White (non-Hispanic); these figures do not total to 100% because 27.7% of participants listed more than one race or ethnicity. On average, clients reported consuming 89.70 standard drinks per month ($SD = 75.34$), falling within the 81st percentile ($SD = 22.75$) of alcohol consumption for same-gender U.S. adults. They reported a peak blood alcohol concentration within the past 30 days of .24 ($SD = .13$).

Clients were recruited using fliers, print ads, e-mail announcements, listserv postings, and word of mouth. The recruitment text advertised for students 18 years or older who were concerned about their drinking. Inclusion criteria included being at least 18 years (with no upper age limit), holding undergraduate status at either UNM or CNM, using alcohol, having a current concern about drinking, and not currently receiving treatment for alcohol use. Clients were paid \$20 for their participation.

2.1.2. Clinicians

Clinicians were nine clinical psychology graduate students at UNM who were at least age 21 years. Five (56%) were men and four (44%) were women.

All potential clinicians participated in a 2-day workshop taught by the authors, in which they learned to conduct a psychotherapy intervention using the elements of two empirically supported treatments for alcohol use disorders: CT (from MI) and FA (from cognitive-behavioral therapy). Care was taken to coach clinicians in crucial components of the therapeutic relationship—such as empathy, collaboration, and genuineness—and not vary those across CT and FA conditions. After training, clinicians were asked to submit up to three practice audiotapes that were reviewed by the authors for proficiency. After meeting study criteria (which took no greater than one practice tape plus in-person remediation), each clinician conducted a single 1-hour study session with a median of five (range = 1 to 8) client participants. Clinicians were paid \$20 per session.

To minimize the effects of individual clinicians, clients typically were randomized to clinicians in groups through equal-probability computerized drawings; however, unanticipated situations (e.g., clinician illness or last-minute schedule changes) occasionally made this ideal impractical, and clinicians were substituted based upon availability.

2.1.3. Conditions

The FA condition was based on questions from New Roads exercise in the Combined Behavioral Intervention treatment manual (Miller, 2004) and consisted of asking

fact-gathering questions to determine the antecedents and consequences of drinking behavior reported by clients. The CT condition focused on clinician skills for (a) recognizing change talk, (b) responding contingently to it when it occurred spontaneously, and (c) strategizing conversations to increase the probability that change talk would occur (Miller & Moyers, 2006). Both treatment conditions were manualized.

2.2. Procedures

2.2.1. Assessment and feedback

Four assessments were administered before the session: A demographics form, an exploratory measure of ambivalence, a measure of acculturation (Scale of Ethnic Experience; Malcarne, Chavira, Fernandez, & Liu, 2006), and an assessment and feedback tool about alcohol consumption and risk factors (Electronic Check-Up to Go [e-CHUG]; e.g., Walters, 2000). The Working Alliance Inventory—Short Client Form (Tracey & Kokotovic, 1989) was administered to clients immediately after the session. Personalized, normative feedback from the e-CHUG has been shown to reduce alcohol use in college students (e.g., Walters, Vader, Harris, Field, & Jouriles, 2009), and thus, e-CHUG results were withheld from client and clinician until after the session to avoid influencing the intervention. This feedback was distributed to participants only as a benefit of participation and not as an additional intervention.

2.2.2. Session overview

Using an ABAB withdrawal design, the approximately hour-long session was divided into four 12-minute intervention stages: two CT stages and two FA stages. Time was allotted at the beginning and end to allow for questions, solicitation of permission to record, wrap-up, referrals, and other administrative tasks. Clinicians transitioned from stage to stage using a visual cue displayed on a laptop-computer screen behind (and out of view of) the client. The order of the CT and FA stages was counter-balanced (i.e., either CT first or FA first), with the appropriate sequence revealed to the clinician immediately before each session. All sessions were audio-recorded for review with a standardized coding system.

2.2.3. Session procedures

During CT stages, clinicians used elements of MI hypothesized to evoke change talk in clients (Miller & Rollnick, 2002; Moyers, Martin, Houck, Christopher, & Tonigan, 2009): asking evocative questions, reflecting change talk when it occurs, using an Importance Ruler, exploring decisional balance, elaborating, querying extremes, looking forward, looking back, and exploring goals and values. During FA stages, they started by requesting details about two peak drinking episodes and continued by analyzing thinking, feelings, and other behaviors preceding and following drinking to determine

how drinking functioned for clients. Clinicians were instructed not to congregate change talk in the FA condition.

After the session, the study coordinator provided clients printed, personalized feedback about their drinking to take home (based upon the information gathered in the pre-session assessments), provided a list of referrals to alcohol treatment, and answered questions about the study or about alcohol use in general.

2.3. Coding

Audio recordings were rated by undergraduate research assistants using the Motivational Interviewing Skill Code (MISC 1.1; Glynn & Moyers, 2009). The MISC 1.1, which is an expansion of the MISC 1.0 (Miller, 2000), focuses exclusively on quantifying the frequencies of client change talk and counter-change talk during each stage of the intervention. A complementary classification for clinician behaviors associated with client change talk has not yet been developed. We considered using the Motivational Interviewing Treatment Integrity (MITI 3.1; Moyers, Martin, Manuel, Miller, & Ernst, 2009) coding system to evaluate clinician behaviors but decided against it, largely because the MITI examines clinician behaviors that are not theoretically specific to the task of recognizing, reinforcing, and evoking client change talk. For example, the MITI focuses substantial attention on the use of open rather than closed questions. Although this is arguably important in the overall use of MI, it is not relevant to the specific issue of evoking client language about change.

Coders were trained in the coding system over a period of several weeks via both group and individual coding practice. Study recordings were not used for training. Reliability was checked periodically (three times) during training, and coders began rating study recordings only after achieving an acceptable overall level of reliability for change talk frequency (CTF) and counter-change talk frequency (CCTF) frequencies, as assessed by intraclass correlation coefficients (ICCs; in the “fair” range or better; Cicchetti, 1994). To reduce coder drift, coders met approximately weekly during the study to practice coding together and to ask questions, and reliability on CTF and CCTF was reassessed twice during the length of the study.

Although ICCs for the source variables were low (ICC = .413 for CTF; ICC = .289 for CCTF), reliability for the summary measure that constituted the outcome variable (Percentage Change Talk) fell between the “good” and “excellent” ranges (ICC = .743). Disparities in reliability between source variables (CTF and CCTF) and summary variables (Percentage Change Talk) are a feature of forming summary variables: Because summary variables are a larger target, they are less precise but much easier for coders to hit reliably. The summary variable in this study (Percentage Change Talk) is identical to that used in a previous study that yielded evidence of a mediational relation between change talk and drinking outcomes (Moyers et al., 2009).

3. Results

3.1. Data analysis overview

This study used a two-way (Time × Condition), repeated-measure, single-baseline (ABAB) design. Participants were randomized so that approximately half ($n = 25$) began with the CT condition and half ($n = 22$) began with the FA condition. Although 51 clients participated, four sessions subsequently were excluded from analyses—two because of poor audio quality, one because of deviation from study protocol, and one because the client was found to be a univariate and multivariate outlier on the Percentage Change Talk variable. All tests were two tailed and performed at $\alpha_{\text{family-wise}} = .05$. Both main effects and interactions were tested.

3.2. Condition

A paired-samples t test compared Percentage Change Talk in the CT and FA conditions. The CT condition yielded significantly greater Percentage Change Talk, $t(46) = 6.561$, $p < .001$, $d = 1.19$, with 64% in CT versus 51% in FA (see Fig. 1 for percentages by stage). Consistent with the prediction, these results suggest differences in Percentage Change Talk between conditions, with CT yielding much more than FA.

3.3. Clinician

A three-way repeated-measures analysis of variance with two within-subjects factors (Condition and Time) and one between-subjects factor (Clinician) was performed. The three-way interaction among Condition, Time, and Clinician was not significant, $F(8, 37) = .990$, $p > .05$, and thus, we concluded that clinicians did not differ in amount of change talk evoked based upon their Time or Condition. The between-subjects analysis revealed a significant effect of the factor of Clinician, meaning that clinicians differed between one another on Percentage Change Talk evocation,

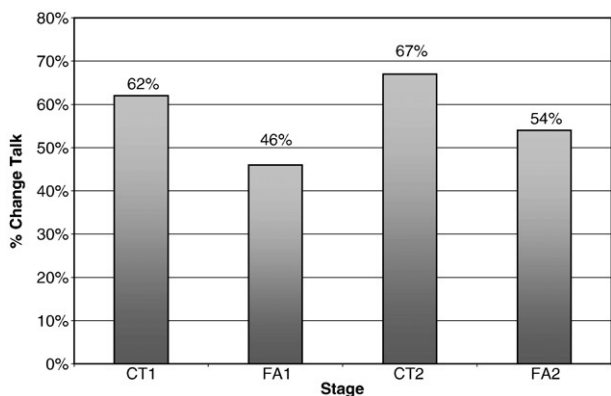


Fig. 1. Percentage Change Talk by stage.

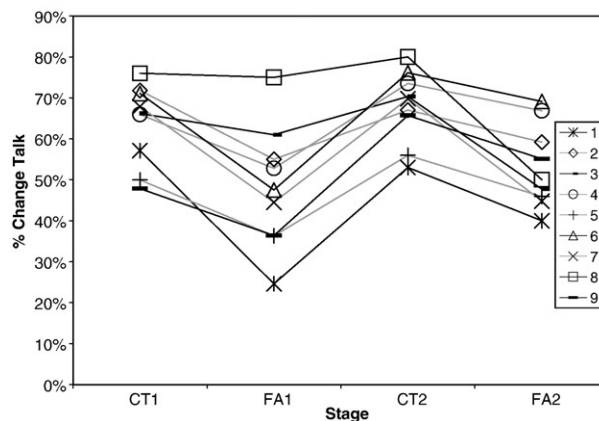


Fig. 2. Percentage Change Talk in each stage, by therapist.

$F(8, 37) = 3.948$, $p = .002$. Percentage Change Talk evoked by clinicians ranged from 49% to 73% (see Fig. 2).

3.3.1. Power

According to the prestudy power analysis based upon previous change talk findings in our laboratory, a power level of approximately .50 to .55 was anticipated for the primary study hypothesis; this assumed a sample of 40 sessions, an effect size of $d = .39$, a two-tailed test, and an unprotected $\alpha = .05$. However, the observed effect size was $d = 1.19$, and the sample size was 47 sessions, so the estimated observed power was much greater than anticipated.

4. Discussion

Although the search for causal mechanisms in behavioral treatments has begun to engender interest in the research community, there are relatively few studies that attempt to manipulate these hypothesized mechanisms directly. As Kazdin (2007) noted, “It would be helpful for intervention research to identify ‘candidate mediators’ and mechanisms or plausible constructs that would explain or account for (statistically) therapeutic change, manipulate the proposed mechanism, assess to ensure it has been manipulated, and then evaluate change” (p. 17).

With regard to MI, several previous studies have demonstrated an association between clinician behaviors and the language that clients offer during treatment sessions. This study, however, is the first that we know of to employ an experimental design to manipulate the expression of client speech. Our data support the notion that clinicians, when they intend to do so, can directly influence clients to speak more favorably about the possibility of change. After being trained to respond contingently to client change talk statements, the clinicians in our study were able to significantly increase the frequency with which clients offered statements indicating a desire, ability, reason, need, or commitment to change their alcohol use.

These findings bear directly upon a central hypothesis regarding the manner in which MI achieves its effect. If ambivalent clients' language during treatment sessions actually serves to convince them of what they believe (Miller, Zweben, DiClemente, & Rychtarik, 1994), then clinicians' ability to influence language in favor of changing will be a critical factor in the success of the treatment. This hypothesis is consistent with the growing body of literature linking in-session client change talk to improved substance abuse outcomes. Our study suggests that this potential causal mechanism can be manipulated by clinicians as proposed.

If it is true that change talk can be reliably influenced by the clinician, then the implications are clear: MI clinicians should maximize in-session behaviors that evoke and reinforce change talk so that clients can maximize their likelihood of reducing problematic drinking. Moreover, if these clinician behaviors accelerate changes in client behavior, and if clinicians can be taught to utilize them reliably, then MI can be delivered more effectively at lower cost and to a greater number of consumers.

Some specific limitations of the study should be noted. First, only elements of MI and FA were tested, and not the entire treatments in which they typically occur. Elements of empirically supported treatments might or might not be efficacious when isolated from their intended contexts, and thus caution is warranted in generalizing these results to MI as a complete therapy. Second, because we did not evaluate clinician behaviors directly, we cannot determine exactly what it was they did that led to the observed differences in change talk. Perhaps a third, unidentified variable was responsible for the observed effect.

Nevertheless, the only variable actively manipulated in this study was the instructional set of the clinicians. For example, for the CT condition, clinicians were trained to respond to client change talk (e.g., "I'm not going to drink even if I get depressed again.") by using evocative questions (e.g., "Are you saying that you would still want to be sober even if your depression came back?") rather than fact-gathering questions (e.g., "How long has it been since you were depressed like that?"). Similarly, when change talk occurred spontaneously (e.g., "I quit drinking once before and it wasn't too bad."), clinicians were trained to recognize and reflect it (e.g., "You're confident you could do it if you decided to.") while in the CT condition but not while in the FA condition. The ability to accurately rate the clinicians' proficiency in recognizing, reinforcing, and evoking change talk would require a coding system that assesses their intent and strategy rather than simply codes topographical features of their responses. In the first example earlier, the clinician's evocative question (which was skillful in evoking further change talk) would receive a closed-question code in the MITI coding system (which might indicate a need for improvement). Further investigation of change talk as an active mechanism of MI will require the development of just such a coding system.

Looking more broadly beyond MI, it is possible that change talk, although usually associated with MI, might be a mechanism of other therapies as well. Perhaps change talk even represents a soon-to-be-specified nonspecific factor of psychotherapy. For example, it is possible that change talk is really a marker for a public expression of verbal commitment to change (e.g., Amrhein, 2004; Christopher & Dougher, 2009), which is an element of many substance abuse treatments, including a 12-step approach. Or perhaps change talk symbolizes growing discrepancies between client actions and the cherished values of an ideal self (e.g., Corbett, 2005), as from a more humanistic perspective. It may mark components of the therapeutic alliance (e.g., Boardman, Catley, Grobe, Little, & Ahluwalia, 2006) or the client's sense of inspiration and joy at glimpsing the possibility of change (Wagner & Ingersoll, 2008). As the phenomenon of client change talk is more frequently seen in the empirical literature, explanations for its value also proliferate. Our study raises the possibility that whatever the actual influence of change talk on client outcomes, it will be achieved through the person of the clinician.

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