

TIPPING TOWARD CHANGE: FACTORS ASSOCIATED WITH PRE-TREATMENT
DRINKING CESSATION IN WOMEN WITH ALCOHOL DEPENDENCE

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ABSTRACT

Objective: Psychosocial treatment research is shifting from a focus on randomized clinical trials to evaluating mechanisms of change. Researchers are interested in change mechanisms specific to certain treatments, across treatments and even those that occur outside of treatment. One phenomenon, sometimes called “assessment reactivity,” is change that occurs during the pre-treatment assessment period of clinical studies. For instance, Epstein et al. (2005) found that 45% of the women in an outpatient treatment for alcohol dependence became abstinent before treatment began. This dissertation further investigated possible mechanisms predicting the pre-treatment drinking cessation occurring in that study. Method: Alcohol dependent women (n=102) participated in a study of 6 months of individual or couple CBT for alcohol use disorders. The current study examined demographic, drinking severity, psychopathology, motivation, and partner/relationship variables to determine which significantly predicted pre-treatment abstinence. Results: Four variables differentiated pre-treatment abstinent from non-abstinent women: percent of days abstinent prior to the Telephone Screen, having a goal of abstinence, women’s ratings of benefits of drinking cessation and their ratings of costs. A multivariate logistic regression with all four predictors was conducted to determine their relative importance in predicting pre-treatment abstinence when controlling for the effects of the other predictors. Results from the logistic regression analysis indicated that more pre-Telephone Screen days abstinent and higher ratings of the benefits of drinking cessation and lower ratings of perceived costs were significantly associated with an increased likelihood for pre-treatment abstinence between Baseline and session 1 of treatment. Having a goal of abstinence did not predict women’s pretreatment abstinence

when controlling for the effects of the other factors. Conclusions: Change was occurring before women made contact with the study and is not exclusively linked to assessment reactivity. The fact that a high rating of the benefits of change in particular, but also a low rating of costs were strong predictors of actual change, provides further evidence that making positive cognitive shifts toward change may be one of the most important mechanisms of behavior change.

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CHAPTER I

INTRODUCTION

New Directions in Treatment Research

The psychosocial treatment research field is in the process of a shift. For two decades, researchers focused primarily on improving psychosocial treatment outcome through research that followed a pre-treatment-post-treatment design to identify whether specific treatments reduce specific symptoms of psychological dysfunction in a population (Longabaugh et al., 2005). Randomized controlled trials became the “gold standard” for treatment research, providing evidence that an increasing number of treatments for specific disorders (such as CBT for anxiety disorders and depression) yielded significantly better outcomes than no treatment at all (Morgenstern et al., 2007). However, treatment outcomes have continued to remain modest with large numbers of people failing to show much improvement. Even for those psychosocial treatments long considered efficacious such as CBT for Panic Disorder (Barlow, Kraske, Cerny, & Klosko, 1989), little progress has been made in identifying how and why they work (Smits, Powers, Cho, & Telch, 2004).

Mechanisms of Change in Psychosocial Treatments

In response to what are seen as limitations in the psychosocial treatment knowledge base, focus has been shifting from comparing disorder-specific treatment packages delivered in large, randomized controlled trials, to an interest in carefully constructed process research, aimed at identifying the “mechanisms of change” within

treatment that lead to improvement for people suffering from psychological disorders (Hayes, Hope, & Hayes, 2007; Kazdin, 2005). In a seminal paper by Kazdin and Nock (2003) they urged the research community to prioritize mechanisms of change research over efficacy tests of competing psychosocial treatment approaches. They emphasized that to identify mechanisms of action correctly, a causal relationship needs to be drawn between the proposed mechanism and the impact it has on the individual, and this poses particular methodological problems. They proceeded to define a new “gold standard” for mechanisms of change research, outlining seven stringent criteria for structuring this type of research.

Kazdin and Nock’s call to action has been followed by an increase in “mechanisms of change” process research that has been conducted with varying levels of success within clinical areas such as treatment of schizophrenia (Kuipers, 2006; Peer, Kupper, Long, Brekke, & Spaulding, 2007), panic disorder with agoraphobia (Hoffart, Sexton, Hedley, & Martinsen, 2008), borderline personality disorder (Wenzel, Chapman, Newman, Beck, & Brown, 2006; Yeomans, Clarkin, Diamond, & Levy, 2008), depression (Szentagotai, David, Lupu, & Cosman, 2008), and substance-use disorders (Hendricks, Delucchi, & Hall, 2010; Longabaugh et al., 2005).

Proposed Mechanisms of Change in Addictions Treatment

A need for new directions in treatment research is particularly pronounced in the alcohol treatment research field, where clinical trials have frequently failed to find efficacy of one treatment over another. For instance, Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity) a large, multi-site randomized clinical trial that tested three commonly used treatments, not only found minimal differences in

outcome, but failed to find hypothesized patient-treatment matching effects (Project MATCH Research Group, 1997).

Mechanisms of behavior change have been an official priority in the alcohol treatment field since 2001, when the National Institute on Alcohol Abuse and Alcoholism (NIAAA) posted a Program Announcement (PA) inviting applications for research on “Mechanisms of Behavioral Treatments for Alcoholism” (Longabaugh et al., 2005). Research methods suggested by the PA were dismantling studies, causal chain analysis and identification of mediators and moderators of alcohol treatments.

In 2004, renowned alcohol treatment researchers Longabaugh, Donovan, Karno, McCrady, Morgenstern and Tonigan presented papers on the topic of mechanisms of change in alcohol use disorders treatment at the annual Research Society on Alcoholism (RSA) conference. In the resulting paper, they asserted that little is definitively known “about the mechanisms of action in these effective behavioral treatments for alcohol use disorders”; that we are “at the first level of identifying these mechanisms of action,” concluding: “a comprehensive theory that attempts to account for the effectiveness of treatment may involve many mechanisms of action: several mediators and several moderators” (Longabaugh et al., 2005, p. 245).

Challenges for Mechanisms of Change Research

In the time since Kazdin and Nock (2003) called for clinical trials designed to test mechanisms of change, much of the mechanisms research has faced challenges and progressed slowly (Longabaugh et al. 2005). Thus far, mediational analyses have often failed to find the expected relationship between hypothesized theoretical mechanisms and observed effects (Morgenstern & Longabaugh, 2000). Additionally, mechanisms

suspected to be at work in a particular treatment such as self-efficacy in CBT are often not unique to these treatments. Even when researchers have managed to isolate a construct that appears to be unique to a treatment, these constructs have been linked with other treatments. For example “affiliation,” a construct positively associated with treatment outcome, was thought to be unique to Twelve-Step Facilitation interventions, however there has also been some evidence that the therapeutic effects of affiliation can be explained by social learning theory, which is common to other treatments, such as CBT (Finney, Noyes, Coutts, & Moos, 1998). These types of findings of overlap among treatments have prompted some investigators to seek “active ingredients” in common factors, believing that elements such as therapeutic alliance, expectations of change and therapeutic rationale are responsible for a large portion of the variance in many different treatments, thus explaining the often minimal differences in effect sizes between treatments (Kazdin, 2005). Consequently, while Kazdin and Nock may advocate designing rigorous studies that test mechanisms of change and establish causal relationships, at this stage in alcohol treatment research it is difficult to pinpoint what these mechanisms are. As a result, preliminary exploratory analyses may be helpful in identifying “candidates” for mechanisms of change (Finney, 2007).

Assessment Reactivity

Pre-treatment Change and Assessment Reactivity

Looking beyond hypothesized mechanisms of change within particular treatments may allow researchers to understand factors confounding some of the treatment effect findings, and can also shed light on the complex process of change itself. As Huebner (2007) points out, “the treatment experience is but one element in a complex interplay of

factors in an individual's behavior change trajectory over time. Understanding these extra-treatment factors will be essential for initiating and maintaining changes in alcohol use disorders" (p.25). One option for studying extra-therapeutic phenomena is to look at when they are observed within the context of randomized treatment studies, but before actual treatment begins. One such phenomenon, commonly called "assessment reactivity," because of its apparent link with assessment, is the repeated observation that significant numbers of individuals enrolled in research trials for addiction treatments seem to become abstinent or reduce their use before treatment even begins. This phenomenon is also sometimes called "research procedures effects" (Morgenstern, 2007), "assessment effects" or "subject reactivity" (Kypri, Langley, Saunders, & Cashell-Smith, 2007).

Evidence of post-treatment assessment reactivity

The effects of *post-treatment* assessment have received some attention from researchers. Clifford, Maisto, & Davis (2007) published a study designed to evaluate the effect of research follow-up on treatment outcome. In their study, they compared outcomes for participants in a trial who were randomized into four follow-up assessment conditions: frequent and comprehensive (FC), frequent and brief (FB), infrequent and comprehensive (IC) and infrequent and brief (IB). They found that people in the IB follow-up condition reported the poorest drinking and negative consequence outcomes, thus supporting the hypothesis that rigorous post-treatment assessment follow-up has a therapeutic effect. Additionally, their study revealed that significant effects of frequency and comprehensiveness of post-treatment assessment varied by type of treatment,

suggesting that post-treatment assessment reactivity interacts with treatment condition (Clifford et al., 2007).

In a treatment trial for 102 women with alcohol dependence, a small reactivity effect was found for women immediately after a 2 hour, 12-month in-person post-baseline interview, but not during the 9 and 15-month follow-up phone interviews (Worden, McCrady, & Epstein, 2008).

The question of whether pre-treatment assessment has an effect has not been studied systematically, however, it is possible that if additional contact with research clinicians post-treatment has an effect, pre-treatment contact may have an impact as well. Additionally, there is growing evidence from a number of clinical trials of significant change occurring during the pre-treatment period.

Evidence of pre-treatment change that may be assessment reactivity

There are a number of studies that have found evidence of pre-treatment change. In a different secondary analysis of the same treatment trial of cognitive behavioral couple's therapy versus individual cognitive behavioral treatment for women with alcohol dependence, Epstein and colleagues (2005) found that women became abstinent across different points of the pre-treatment period, so that 45% of them had stopped drinking by the first session of treatment. Additionally, they found that a reduction in drinking pre-treatment predicted outcomes at post-treatment. During the pre-treatment assessment period, women participated in a 10-minute Telephone Screen and underwent two face-to-face assessment interviews: a Clinical Screen with their relationship partner present and a Baseline Assessment, totaling approximately 5 hours. The purpose of this

dissertation is to explore further the findings of Epstein and colleagues (2005) to seek factors that may have contributed to this pre-treatment change.

Pretreatment change has been observed in studies of men as well. Morgenstern and colleagues (2007) found during a clinical trial comparing four sessions of motivational interviewing (MI) with twelve sessions of MI plus coping skills training (MI + CBT) for alcohol use disorders among men who have sex with men, that men who declined treatment and were followed, forming a non-help seeking (NHS) group reduced their alcohol consumption as well. The drink reduction in the NHS group was clinically and statistically significant, and sustained. Morgenstern and colleagues found that men in this group showed a major reduction in drinking immediately following intake (entry into the study and assessment). Although it has been suggested that changes in control groups may be in part a result of regression to the mean, Clifford, Maisto, and Davis (2007) emphasize that this would unlikely explain all of the variance in the Morgenstern study. Additionally, men in the MI treatment condition experienced a similar reduction prior to the start of treatment. Morgenstern and colleagues conclude that their findings suggest that in addition to scrutinizing treatment processes, events immediately prior to research need to be researched, including “the impact of research procedures” (p. 82).

Implications of pre-treatment assessment reactivity for clinical outcome

Pre-treatment assessment reactivity effects have major implications for clinical research, particularly since they may help explain treatment failures in some cases. Project MATCH, which compared 4 sessions of Motivational Enhancement Therapy (MET) with 12 sessions of CBT or 12 sessions of Twelve Step Facilitation (TSF) found minimal outcome differences and no strong treatment matching effects. Researchers

(Project MATCH Research Group, 1997) hypothesized that the extensive research assessment protocols may have reduced the sensitivity of the study to detect differences. Post-treatment follow-up was about five hours, approximately the length of treatment time in the MET condition. However, most significantly for this study, the pre-treatment assessment required up to eight hours of intensive contact with research clinicians before treatment began (Project MATCH Research Group, 1997).

Project COMBINE (Combining Medications and Behavioral Interventions; Anton et al., 2006) the largest multisite randomized controlled trial conducted to date, has encountered similar problems to Project MATCH. Concerns about methodological issues were raised when individuals randomized to placebo medication combined with intensive medical management indicated significant improvement in their drinking behavior, while a known active medication (acomprosate), contrary to previous findings, did not appear to be efficacious. In an effort to research the interventions under investigation in Project COMBINE, like in Project MATCH, extensive assessment was undertaken, and researchers have suspected that assessment effects may help explain these inconsistent findings, in addition to the more commonly considered outcome problems: regression towards the mean, measurement error, or the varying course of alcohol-use disorders (Clifford et al., 2007).

To summarize, the likelihood that assessment somehow engages a mechanism of action is important for a number of reasons: 1) the majority of patients who obtain treatment for alcohol use disorders do not participate in research studies; therefore it is important to partition the variance specific to the treatment under investigation to ensure that the transfer of treatment shows equal effectiveness in naturalistic settings as it does

efficacy in clinical trials (Clifford et al., 2007); 2) assessment reactivity effects may diminish design sensitivity enough that they could reduce significant outcome variation between differing treatments that may in fact show significant differences without these assessment effects (Clifford et al., 2007); and 3) related to this, there may be relatively quick and simple mechanisms of change embedded in assessments that could be (or are already being) utilized in treatment. If this is indeed the case, a further question must be posed: what determines whether someone will react significantly to such a minimal mechanism of change?

Hypotheses regarding pre-treatment assessment reactivity

Several hypotheses have been put forward to explain the mechanisms of pre-treatment assessment reactivity, although at this time, no exhaustive study has been conducted to rule in or out competing hypotheses. Three hypotheses proposed by Epstein et al. (2005) were: a) the impact of making a decision to enter treatment/ deciding to respond to an advertisement acts as a significant motivator, b) individuals telling people in their social network that they are making a change in turn serves to strengthen commitment to that change, and alters the response of the social network; c) the process of assessment itself is therapeutic.

Decision-making

Epstein et al. (2005) describe evidence from a poster presentation (Sobell et al., 2003) that proposes a hypothesis about the impact of making a decision to enter a treatment study on individuals with alcohol use disorders. The Sobell study on self-change examined levels of participants' pre-treatment drinking across five major time points in the study, namely: pre-advertisement, date of the participant's first phone call

contact with the study, date the participant completed the initial assessment, date intervention materials were sent to the participant, and 12 months after the intervention materials were sent out. Sobell found that participants reduced drinking between seeing the advertisement for the study and calling, but not between that point and before intervention materials were sent out. Epstein et al. (2005) also found that a significant number of women became abstinent between the telephone screen and the first face-to-face meeting with a research clinician for the clinical screen, supporting the claim that change can occur before true assessment begins. There is therefore some evidence that at least for a proportion of women, the decision to enter the study may have motivated some to become abstinent. In other research, Morgenstern and colleagues (2002) who studied cognitive processes of twelve step treatments, found much of the change in cognitions that predicted treatment outcomes appeared to occur prior to patients entering treatment. Whether this is the result of decision-making, some other cognitive process, or a secondary effect of preparing to enter treatment such as “remoralization” after failed attempts to change alone (Tuchfeld & Marcus, 1984) needs further investigation.

Social Network influence

Strong evidence exists to support the role of a social network in supporting (or undermining) changes in drinking. Tuchfeld and Marcus (1984) propose that particularly for people entering treatment for the first time, the act of entering treatment functions as a public declaration of intent to change, which may be an important commitment mechanism, and may elicit a response from the social network, that promotes further change. Additionally, women in the Epstein et al. (2005) study committed to participation in the presence of their partner, increasing the likelihood of a social network effect on this

particular sample. However, there is no research to date that investigates the social network hypothesis of pre-treatment change. Additionally, since this “pre-assessment reactivity” effect has been found in studies that do not involve couples’ treatment (Morgenstern et al., 2007), and it is unknown whether study participants inform others in their social network of their decision to enter treatment, social network influence does not seem a sufficient explanation for pre-treatment assessment effects.

Therapeutic change from the assessment process itself

Assessment is a major component of any thorough clinical trial, and yet it has rarely been taken into account when evaluating outcomes. Several researchers (Bien, Miller, & Tonigan, 1993; Clifford & Maisto, 2000, Epstein et al., 2005, Kypri et al., 2007, Clifford et al., 2007) have proposed that assessment may in fact function as a brief intervention in the treatment of problem drinking. Miller and Sanchez (1994) identified six components that frequently occur within successful brief interventions, describing them with the acronym FRAMES: feedback, responsibility, advice, menu (of options), empathy and self-efficacy. Of these, in a review that compared 32 brief intervention studies, only empathy and advice were found to consistently appear in most of them (Bien et al., 1993). This finding led Miller (2000) to propose that a major mechanism of change in brief interventions is “agape,” the quality of empathic acceptance that is expressed in a therapeutic interaction. Miller (2000) notes that therapist effects have consistently exerted an impact on clients in the addictions field; of the studies investigating these effects, a significant finding is that clients of counselors low in empathy fared significantly worse than those who were given brief interventions and self-help materials to read at home (Miller, Taylor, & West, 1980). Early research on a single

session with an empathic counselor in a hospital emergency room found patients who received this counseling were significantly more likely to seek treatment for alcohol problems than individuals randomized to the control group who received only emergency care (65% versus 5%) and the same finding was replicated two years later (78% versus 6%) (Chafetz, Blane, Abram, & Golner, 1962; Chafetz, Blane, & Clark, 1964). While the purpose of a clinical research interview is different to that of a therapeutic intervention, the degree of careful listening required of a research clinician for a research interview coupled with a longer period of non-judgmental, respectful attentiveness than is the norm in most non-therapy situations and the reflecting back of statements for clarification, could be experienced by the participant as an empathic encounter, or even a form of therapy (Clifford & Maisto, 2000; Epstein et al., 2005). There is a robust literature supporting the relationship between therapeutic alliance and outcome (Martin, Garske, & Davis, 2000). It is likely that the relationship between empathy and outcome is somewhat more complex than Miller (2000) proposes, however it is likely that therapeutic alliance is a proxy for other variables (DeRubeis, Brotman, & Gibbons, 2005) and empathy may be one of them.

A theoretical explanation of the active mechanism of assessment that differs from the “agape” hypothesis is grounded in self-regulation theory. Self-regulation theory posits that individuals are predisposed to adapt to their changing environments. These changes can occur via environmental feedback or social feedback (comparisons with others), which can trigger dissonance between desired and real perceptions of self (Clifford & Maisto, 2000). Therefore the process of assessment would increase awareness of the ways in which a person is dissatisfied with his or her sense of self, and the increased self-

monitoring and focus could lead to behavior change. Clifford and Maisto (2000) emphasize that self-regulation will not occur equally for all people, since it requires the element of “self-awareness” as defined by Hull and Levy (1979), which “entails a greater responsiveness to the self-relevant aspects of the environment” (quoted in Clifford and Maisto, 2000, p.790), thereby potentially explaining variability in individual responsiveness to assessment. Clifford and Maisto (2000) hypothesize that people with alcohol use disorders may be primed to engage in Hull’s form of self-awareness during assessment interviews, since self-awareness is known to diminish during alcohol use, and one of the requirements of any assessment interview is an alcohol-free state.

Clifford and Maisto (2000) propose an integration of FRAMES and self-regulation theory, identifying ways in which an assessment interview could convey each portion of the FRAMES protocol and lead to self-regulation. A combination of unintended consequences of research interviewer interactions, a sense of self-efficacy in the study participant from deciding to enroll in the study, increased awareness of problematic consequences of alcohol use, and in the case of couples’ therapy, increased awareness of the impact of alcohol use on significant others, are all factors that could contribute to a self-regulatory effect.

Critique of Simple, Unifying Theory of Assessment Reactivity

Zucker and Ichiyama (1996) take issue with self-regulation theory in a commentary, arguing that despite the pleasing simplicity of single unifying theories like self-regulation theory (or for that matter, the overarching power of agape) these are unlikely to adequately explain the complex and multiple interacting factors that impact human behavior. Agape or empathy, self-regulation theory and FRAMES offer

potentially useful constructs for further investigation into the mechanisms of action in assessment reactivity; however since mechanisms of change research is unlikely to prove a single unifying theory, it makes more sense to consider multiple mediators and moderators that may be at work.

Investigating Pre-Treatment Assessment Reactivity

Since there is almost no literature in the area of pre-treatment assessment reactivity and the current study as already mentioned is largely exploratory in nature, it will turn to other areas in the literature as a springboard for further investigation. There is evidence that a potential link exists between mechanisms of action in assessment reactivity and brief interventions for substance use disorders. This is because almost all treatment studies including those that are brief utilize some sort of pre-treatment assessment, and in fact many brief interventions look much like a pre-treatment assessment.

The second area that shares some similarities with the assessment reactivity phenomenon is “self-change” or “natural recovery,” which fifteen years ago was in as exploratory a stage as assessment reactivity is now. The main link between these two literatures is that “natural recovery” or “self-change” is essentially cessation of problem drinking without intervention, which bears some resemblance to pre-treatment drinking cessation before treatment.

Brief Intervention Literature

Evidence of an Assessment Effect, and the Brief Interventions Literature

Looking to the brief interventions literature provides no direct, unequivocal evidence that assessment itself has an effect. However, there are repeated suggestions in the brief interventions literature that assessment reactivity may play a role.

Almost all the brief interventions studies analyzed in a detailed review by Bien, Miller and Tonigan (1993) included an assessment component. In some of the studies, brief interventions were compared with longer treatments and were found to have equal effects. Since the brief and longer treatments both included assessments, these do not rule out the possibility that assessment is an active ingredient in brief interventions.

Despite the overwhelming evidence in support of the effectiveness of brief interventions for problem drinkers, there have been occasional clinical trials that have failed to find significant benefits. Bien, et al., (1993) describe one of these that took place in Scotland (Heather, Campion, Neville, & Maccabe, 1987), noting that the more extensive brief intervention (feedback and physician advice) group, the simple advice group and the no treatment group all received a “thorough” assessment. At 6-month follow-up all three groups were drinking significantly less with no significant between-group differences.

In the most extensive evaluation of a brief intervention, the World Health Organization (WHO) screened over 32 000 patients in ten nations, found three conditions receiving a brief intervention reduced their alcohol consumption by one third, a significantly greater reduction than in the control group receiving screening but no advice. However, outcomes of the control group were inferior to the brief interventions

only among men. Women showed comparable reductions in drinking after screening with or without advice. This raises interesting speculative questions about methodological issues, or cultural differences, as well as whether there may even be differential responsiveness to assessment by sex.

Explicit studies of pre-treatment assessment effects from brief interventions

The most explicit test of the effect of pre-treatment assessment was conducted by Kypri and colleagues (2007) in the context of a brief intervention for hazardous drinking when they used 2 control groups within a randomized, controlled trial. Participants were 576 students age 17-29 attending a primary health-care clinic who agreed to participate in the study after receiving a score > 8 on the Alcohol Use Disorders Identification Test (AUDIT) as well as endorsing consuming more than the recommended upper limit for episodic drinking (4 drinks for women, 6 for men). Of the total, 293 (153 female) students were randomized to the two control groups: group A and B. Group A then received an information leaflet, while group B also received the leaflet plus 10 minutes of web-based assessment four weeks later. Assessment components included a 14-day retrospective drinking diary, questionnaires about alcohol problems and academic role expectations, and a questionnaire on perceived drinking norms among peers. Twelve months post-baseline, group B reported lower overall consumption, fewer heavy drinking episodes, fewer problems and lower AUDIT scores than group A, although many of these findings showed a trend, without reaching significance. Kypri and colleagues conclude that although the study is limited in that it relies entirely on self-report and could be influenced by social desirability, it appears that brief assessment alone may reduce hazardous drinking.

Since their brief assessment was web-based, the necessity for the human interaction implied by theories of empathy or agape (Miller, 2000) seems to be called into question. The study also found no difference in the effects between women and men. Additionally, the assessment, like a number of brief interventions was effective despite being extremely brief, whereas Clifford and colleagues (2007) found that the effects of post-treatment assessment on outcome was dependent on frequency and comprehensiveness of the assessments. The inconsistencies of these findings imply that additional variables are at work.

One study by Harris and Miller (1990) is cited as evidence that assessment alone is unlikely to be a significant mechanism of action in brief interventions. In the study, problem drinkers (17 men, 17 women) were randomized to one of four conditions: therapist directed self-control training, self-directed self-control training or one of two control groups. One control group was told to simply wait, while the other was instructed to complete self-monitoring cards and mail them in, while awaiting treatment. Each participant received about 2-3 hours of assessment before randomization. During the 10-week experimental period, the brief intervention groups showed significant reduction in drinking, but neither control group did. The researchers concluded that the study rules out the unique contribution of initial assessment, motivational characteristics of the population, reactivity of self-monitoring or the passage of time, to the effectiveness of brief interventions.

This finding does cast doubt on the degree of impact from assessment or self-monitoring, both of which have been hypothesized to be mechanisms of change. However, limitations of the Harris and Miller (1990) study preclude conclusive

interpretation of the results. First, the study had difficulty recruiting an adequate number of participants and the small sample size (approximately 8 participants per treatment condition) provides little statistical power to detect group differences. Second, this was a problem drinking, not alcohol dependent, sample. Participants were recruited via advertisements that called for individuals who were not “alcoholics” but were interested in controlling their drinking due to drinking-related problems. Applicants with a history of severe alcohol withdrawal or alcohol related medical problems were referred to an abstinence-based program. Consequently, results may not be generalizable to more severely affected individuals. A third limitation to the Harris and Miller findings is that the study included a variable that could affect motivation: the phenomenon of a wait-list control. One might speculate that if assessment is in itself a potential mechanism of action, it may only function as one under certain conditions. Harris and Miller themselves point out that designation to a wait-list control where people know they will be receiving treatment at a somewhat distant point in the future, particularly the condition in which individuals were explicitly told to wait, may result in people doing just that: waiting. Further research may be needed to determine whether “mechanisms of inaction” may be at work in wait-list control groups.

While there is evidence that assessment and brief interventions share some characteristics, and that each may precipitate change, there is inconsistent evidence of when and with whom. This raises questions about whether assessment reactivity has less to do with the assessment factors and more to do with individuals being assessed. Again, looking to the brief intervention literature, Burnum (1974) found that patients who complied with physician advice to alter an addictive behavior did so after a mean of 1.3

sessions of advice, implying that individuals who are going to exhibit change are likely to do so early on. In a brief “advice-giving” intervention where participants failed to show any change compared with controls (Kuchipudi, Holbein, Flickinger, & Iber, 1991) participants had alcohol-related gastrointestinal disease, were actively drinking and had undergone previous unsuccessful counseling to stop drinking (Bien et al., 1993) suggesting that participant factors may have limited treatment outcome. If brief interventions and assessments function through similar mechanisms, and neither seems to have therapeutic effects in all cases, but may in some, the question arises whether it is possible to predict which individuals might be more likely to be responsive to minimal interventions or even to an assessment procedure.

Self-Change/Natural Recovery Literature

Natural recovery (also called self-change, spontaneous remission, untreated remission, or spontaneous recovery) is a phenomenon that until recently has remained unacknowledged, under-researched and controversial. In the past fifteen years, epidemiological and longitudinal studies have provided ample evidence that the majority of people with problematic alcohol use do not seek treatment and many do recover on their own. Two Canadian population surveys for instance found that self change without treatment or self-help groups made up approximately 77% of the recoveries from alcohol misuse, supporting hypotheses that self-change is the most prevalent of a number of pathways to recovery, particularly among less severely dependent drinkers (Sobell et al., 1996).

There are several reasons why the self-change literature is an appropriate source to gain more information about pre-treatment assessment reactivity:

1) Pre-treatment drinking cessation, like natural recovery is technically a change process that does not directly result from a treatment intervention. 2) There have been several hypotheses of the self-change process that either resemble those of assessment reactivity or offer areas of further exploration for assessment reactivity. One of these is the idea of “quantum change” (Miller, 2004) that proposes that some people can undergo rapid and dramatic change in a relatively brief period of time. In a study on the “quantum change” phenomenon, Miller and colleagues found that change could occur in response to events ranging from a dramatic event to a small cognitive shift. This supports a theory by Sobell and colleagues, that natural recovery occurs when the weight of negative consequences counterbalanced with positive ones for drinking tips towards change; the specific events that tip the scale can be major or minor (Sobell, Sobell, Toneatto, & Leo, 1993; Sobell et al., 2002). The brief intervention of Motivational Interviewing attempts to catalyze this process through a number of techniques including a “decisional balance” where clients are asked in a non-evaluative way to describe pros and cons of continuing the problem behavior versus stopping. Sobell and colleagues have delivered large-scale community interventions designed to do exactly the same thing: tip the decisional balance toward reducing or stopping problem drinking. Interestingly, although their intervention showed significant reduction in participants’ drinking, there was no significant difference between a more involved intervention, which included advice and personalized feedback, versus an advice and pamphlet group (Sobell et al., 2002). Sobell and colleagues (2002) hypothesize that the extent of the pre-participation assessment, which consisted of a 360-day timeline follow-back interview (TLFB; Sobell & Sobell, 1992, 2000), Alcohol Disorders Identification Test (AUDIT) and measures of motivation and self-efficacy

affected participants so that neither intervention had an appreciable added effect. In such a case, the process of assessment might in itself provide the problem drinker with additional self-generated information about his/her substance use and resulting consequences that can help to tip the scale towards change.

Limitations of Natural Recovery Link

Clearly, there are differences between natural recovery and pre-treatment assessment reactivity: Only a small number of people with alcohol use disorders seek treatment. Since the women in the study under investigation have in fact sought out treatment, there may be important differences in these women compared with self-changers. Additionally, the substance dependence among the women in the study may be more severe than the substance use disorders in most self-changers, which tends to be moderate to mild (Sobell et al., 1996). Additionally, as already mentioned, the assessment reactivity process may more closely resemble the reaction to a motivational interview or brief intervention than self-change, although the Sobell et al. (1996; 2002) community interventions to facilitate self-change are essentially brief interventions. They involve engaging the cognitive reevaluations that have been shown to be common in the narratives of self-changers, in an effort to catalyze the natural change process, likely a similar mechanism to MI and other brief interventions.

Women and Alcohol Use Disorders

Which Women Stopped Drinking Before Treatment Began?

One of the goals of the current study is to try to understand factors associated with pre-treatment change and if indeed assessment reactivity occurred, to identify variables that may predispose individuals to be more responsive to pre-treatment assessment

effects. In order to do so, it is important to identify characteristics of women with alcohol problems and the women in this study sample, to place the study in the context of the alcohol use disorders and recovery literature more generally.

History, severity and course

Women have been found to differ across a number of variables that correlate with alcohol use disorders. Although the onset of alcohol use disorders tends to be later in women, the course of alcohol dependence is faster and more severe than in men, leading to a 50 to 100% higher alcohol-related death rate (Smith & Weisner, 2000). Women tend therefore to experience more severe negative consequences from drinking, but are less likely to seek treatment, and as a result, many of the published data on treatment for alcohol problems is based on predominantly male samples (Swearingen, Moyer, & Finney, 2002).

Comorbidity

In treatment samples, lifetime rates of comorbid psychiatric disorders in women with alcohol use disorders have been estimated as high as 65%, with particularly high rates of depression and anxiety disorders (Mann, Hintz, & Jung, 2004). Men with comorbid psychiatric disorders have been shown to have worse treatment outcomes than those with substance use disorders but no comorbid diagnosis, and comorbidity is considered a risk factor for poor outcome in women as well (Schadé, Marquenie, van Balkom, de Beurs, van Dyck, & van den Brink, 2003).

Relationship and Treatment Motivation Factors

One of the significant findings of differences behind women's drinking and men's is that women are more likely to say they drink to handle negative affect and relationship

difficulties (McCrary, Epstein, Cook, Jensen, & Hildebrandt, 2009). As a result, relationship-oriented factors are considered important in understanding and treating women with alcohol use disorders. Thus, Alcohol Behavioral Couple Therapy (ABCT) has been developed by McCrary and Epstein to merge a cognitive behavioral treatment for alcohol abuse and dependence with couples' therapy. Although couple's treatment for alcohol dependence in women has shown promising results (McCrary et al., 2009) as it has in treatment of men with similar disorders, in a subsequent study, McCrary, Epstein, Cook, Jensen, & Ladd (2010), also found that a significant majority of the women in a treatment study where they had a choice between couples' or individual therapy selected individual (n=98) rather than partner-involved (n=17) treatment. They found that women selecting individual over couple's treatment differed in a number of ways: they reported trends toward lower relationship satisfaction on the Dyadic Adjustment Scale (DAS) and more desire for change on the Areas of Change Questionnaire (ACQ). They also had male partners whom they stated drank more alcohol more frequently per week.

This finding about treatment choice is important since there is evidence that treatment preferences affect the therapeutic alliance in randomized controlled trials (Iacoviello et al., 2007), particularly early in the treatment. Since therapeutic alliance has repeatedly been shown to correlate with outcomes (Miller, 2000), the potential impact on the significant number of women in this sample who were not randomized to their treatment of choice is relevant to this study, since they were randomized during the pre-treatment period. A finding that not being randomized to treatment of choice negatively impacted pre-treatment abstinence rates after the randomization process would suggest that either relationship factors (decreased alliance with clinical research interviewer;

concern about relationship with partner) or cognitive factors (positive expectancies of treatment of choice versus other treatment) or affective factors (disappointment, frustration, hopelessness) could have contributed to this effect.

The Current Study: Research Questions and Related Hypotheses

Epstein et al. (2005) found that 46 of a sample of 102 alcohol dependent women entering a randomized clinical trial of couple versus individual CBT became abstinent between the initial telephone inquiry (telephone screen) and before the first treatment session. Reasons for this drastic pre-treatment drinking cessation are not presently understood. The current study aimed to explore and illuminate possible mechanisms of pre-treatment change in drinking, via several avenues of inquiry.

The current study examined the patterns of drinking cessation among those women who demonstrated pre-treatment drinking cessation versus those who did not. The study explored factors associated with pre-treatment drinking cessation, in terms of participant characteristics, in the two groups (abstainers before session 1 versus drinkers at session 1) in several areas, described below.

Hypotheses

Because there is little scientific literature on which to build hypotheses about variables that would distinguish the nearly half of study participants who became abstinent before treatment from those who did not, this is primarily an exploratory study. However, efforts were made to hypothesize where possible.

1. Person Centered Variables

1a. Demographic variables.

Demographics were to be compared across the two groups.

Ib. Alcohol use and history.

It was expected that an older age of onset of alcohol abuse/dependence, a less severe pre-treatment drinking history and no family drinking history would predict pre-treatment abstinence between Baseline and the day before treatment. It was expected that if pre-treatment abstinence were the result of assessment reactivity, women in the pre-treatment abstinent group and the pre-treatment non-abstinent group would show no difference in their drinking behavior before entering the study.

Ic. Psychopathology.

In general, comorbidity with axis I and axis II disorders predicts worse treatment outcomes (Hunter et al. 2000, Schadé, Marquenie, van Balkom, de Beurs, van Dyck & van den Brink, 2003), however much of this research has been done with men. Still, based on these findings, it was hypothesized that the non-abstinent group would have a higher rate of axis I or II diagnoses than the abstinent group.

Id. Treatment history.

If pre-treatment abstinence does come from a therapeutic effect of assessment, it is possible that the impact of assessment will be greater for someone for whom the experience is new (i.e. someone who has never received treatment in the past). Based on this rationale it was hypothesized that a history of previous treatment was more likely in the non-abstinent group.

Ie. Pre-treatment motivation.

Pre-treatment motivation was measured by a goal of abstinence, and a self-report measure of motivation for change. More motivation for change was hypothesized to be more likely in the pre-treatment abstinent group than the non-abstinent group.

If. Relationship factors.

It was hypothesized that there would be higher relationship satisfaction ratings and lower levels of spousal drinking in the abstinent group than the non-abstinent group based on evidence that women are more likely to drink in response to interpersonal conflict or emotional distress (Annis and Graham, 1995).

2. Treatment Variables

The study explored treatment-related variables for pretreatment abstinent versus non-abstinent women in two additional domains:

2a. Treatment condition.

As already delineated, one proposed, unexamined mechanism for assessment reactivity is that the act of making a commitment to treatment with the involvement of a partner during the assessment phase would indicate greater commitment to change and would therefore predict pre-treatment abstinence. It was hypothesized that women randomized after the baseline research interview to the couples' rather than individual treatment condition would show higher levels of pre-treatment abstinence than women randomized to the individual condition.

2b. Treatment preference.

Women who preferred to be randomized to one condition and were randomly assigned to the other condition were hypothesized to be less likely to be abstinent at session one than women who were assigned to the condition they would have preferred.

3. Comparison of Predictive Value of Variables Examined

Finally, it was important to explore the relative strength of significant predictors of pre-treatment abstinence controlling for the effects of the others. This would be

explored using logistic regression with all predictors that significantly differentiated pretreatment non-abstinent women from abstinent women. There were no specific hypotheses as to which of these would emerge as the strongest predictors of pre-treatment abstinence.

CHAPTER II

METHOD

The current study is a secondary analysis of a randomized clinical trial for alcohol dependent women. The original study compared cognitive behavior individual treatment (ABIT) to a couples' treatment, Alcohol Behavioral Couples Therapy (ABCT). In a previous secondary analysis of this study, Epstein and colleagues (2005) found that more than 45% of the sample had achieved abstinence between the initial telephone screen and before the first session began, raising questions about the possible mechanisms at work during this significant pre-treatment change. When Epstein et al. (2005) examined several variables for an association with assessment reactivity, including 1) a stated goal of abstinence, and 2) stage of change (as determined by the Readiness to Change Questionnaire, Heather et al., 1991) and effect of specific interviewer, none was found. The current study conducted additional quantitative analyses of pre-treatment factors in an effort to find which variables do predict pre-treatment drinking cessation. The original clinical trial, reported on in detail by McCrady and colleagues (2009), is summarized below.

Participants

Participants were 102 women with alcohol use disorders who volunteered to take part in a randomized trial for women with alcohol abuse or dependence at the Center of Alcohol Studies at Rutgers University. Recruitment took place through advertisements in

local newspapers. Primary investigators on the study were Barbara McCrady Ph.D. and Elizabeth Epstein, Ph.D.

To be included in the study, women 18-75 years of age had to have a current diagnosis of alcohol abuse or dependence as determined by the Structured Clinical Interview for the DSM-IV (SCID, (First, Gibbon, Spitzer, & Williams, 1996a); have consumed alcohol in the past 60 days; be married, cohabitating, or in a committed heterosexual relationship (defined as at least 1 year long with plans to continue relationship); have the male partner be willing to participate in all aspects of treatment and research, including attending every session of couples' treatment if they were randomized to that condition. Women were excluded if they or their partner showed signs of severe organic brain disorder (<25 on Mini-Mental State exam (Folstein, Folstein, & McHugh, 1975)), showed signs of psychotic disorder (psychotic screen of the SCID (First et al., 1996a)), were currently physiologically dependent on a drug other than alcohol (SCID (First et al., 1996)) or showed evidence of high-risk domestic violence as evidenced by responses on the Modified Conflict Tactic Scale (Pan et al., 1994) and an individual interview with the victim of the violence if any was reported.

Mean age of the women was 45.05, (SD = 9.18, range =29 to 68), 86% were married. The women had an average educational attainment of 14.55 years, (SD =2.57, range = 10 to 23.5 years), and a range of 0-4 children (M=1.22, SD = 1.29). Median household income was \$18,500. Most of the sample was Caucasian (95%), about 1/3 were employed full time, 1/4 were homemakers and just under 1/5 worked part-time. Many of the women had had previous treatment for alcohol use disorders (29% outpatient, 28% inpatient) and 41% met lifetime criteria for a substance use disorder

other than alcohol or nicotine. In the 3 months prior to treatment, the women drank a mean of 2/3 of the days with most of their drinking in the heavy range. All but one met criteria for alcohol dependence. Half of the women met criteria for another Axis I disorder, about half for a mood disorder and a fifth for an anxiety disorder. One third of the women met criteria for an Axis II disorder. Participants in the two treatment conditions did not differ significantly on any demographic variables, psychopathology, alcohol or drug use, social or relationship characteristics. See Table 1 for descriptive information for the sample.

Demographic variables to be examined in this study, including age, number of children at home, and household income were collected during the clinical screen and baseline interview. Information about treatment history (lifetime and past 90 days) was also gathered during the clinical interview.

Measures

Timeline Followback Interview (TLFB)

The TLFB (Sobell & Sobell, 1996) is a widely used calendar assessment method that prompts recall through memory aids such as anchoring significant events. For the present study, it was used to obtain daily drinking data for the 90 days prior to the baseline interview, and was collected with both partners present. It was administered again every 90 days from the time of the baseline interview to collect pre-treatment, treatment and follow-up drinking data. Follow-up drinking data for the female participants were collected separately from each woman and her partner, and monthly worst-case reports were used. If women did not provide follow-up data, partner data were substituted. Collateral data for Percent days Abstinent (PDA) were collected in 17-27%

of cases. Reported test-retest reliability of the TLFB is high and correlations between drinker and collateral reports of drinking also are high, ranging from $r = .84$ to $r = .94$ (Maisto, Sobell, & Sobell, 1982). Analyses for the original McCrady study used two variables from the TLFB – percentage of abstinent days and percentage of heavy drinking days (more than 3 standard drinks per day for women; more than 4 standard drinks per day for men, NIAAA, 2003).

For the current study the outcome variable, *pre-treatment abstinence* was operationalized as a dichotomous variable with the abstinent group reporting 100% abstinence between the baseline interview and the day before treatment began. All other women were in the non-abstinent group. A variable used for the current study was partner percent days abstinent during the pre-treatment drinking period; this was calculated using the TLFB interview as well.

Structured Clinical Interview for DSM-IV (SCID),

Alcohol and Drug Use Disorders Modules

The SCID (First, Gibbon, Spitzer, & Williams, 1996a) was administered during the Clinical Screen Interview; variables from the SCID to be used in the current study are severity of current and lifetime alcohol use. Overall inter-rater reliability on the SCID for alcohol diagnoses has been reported at kappa = .75; for other substance use disorders, kappa = .84 (Williams et al., 1992). Since all but one female participant met criteria for alcohol dependence, abuse and dependence symptoms were totaled and combined as a continuous measure of severity of alcohol dependence.

Drinking Goal

Women were asked to rate their drinking goal on a 6-point scale ranging from “no change” to “lifelong abstinence” (adapted from Hall, Havassy, & Wasserman, 1991). Women were also invited to check off that none of the options applied to them, and to write in their own drinking goal. For use in this study, a dichotomous variable was computed to identify women reporting a goal of abstinence versus not.

Family History Assessment Module

The *Family History Assessment Module* (Janca, Bucholz, & Janca, 1992), administered during the Baseline Interview, is a 48-item interview that assesses for substance use problems within an individual’s first and second degree relatives. For the current study, a dichotomous variable was used to identify women with a positive family history of substance use problems versus not.

Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Structured Clinical Interview for DSM-IV Axis II Disorders (SCID II)

SCID modules (First et al. 1996a; First, Gibbon, Spitzer, & Williams, 1996b) were administered to each partner individually as Baseline to assess a number of possible DSM-IV diagnoses: current and lifetime mood, anxiety, eating, and personality disorders. Good inter-rater reliabilities have been reported for the SCID, with a mean reported kappa in a previous study (Epstein, Labouvie, McCrady, Jensen, & Hayaki, 2002) of .87. For the present study, two summed scores were created, one accounting for all axis I diagnoses other than substance use disorders and the other for any axis II diagnoses.

The Alcohol and Drug Consequences Questionnaire (ADCQ)

The ADCQ (Cunningham, Sobell, Gavin, Sobell, & Breslin, 1997), administered during the Clinical Screen, is a self-report questionnaire that assesses an individual's perceived costs and benefits of changing alcohol or drug use behavior. The questionnaire is made up of 29, 5-point likert items ranging from "Not Very Important" to "extremely important." Two subscales (perceived costs and benefits) were computed by adding all items in each of the subscales and dividing by the number of items. These two subscales provided the variables, "perceived benefits of drinking cessation" and "perceived costs of drinking cessation" that was used for the current study. Items were prorated by the mean of the other scale items if at least 80% of the data were nonmissing. If responses to more than 20% of the items were missing, the scale was considered missing for that participant. Reliability reports for each subscale are good with Cronbach α 's of .92 for the Costs of Changing subscale and Cronbach α 's of .90 for the Benefits of Changing subscale (Cunningham et al., 1997). Good concurrent validity has been demonstrated by examining correlations between ADCQ subscale scores and the number of costs and benefits listed in free response format on decisional balance exercises. Predictive validity has been demonstrated through the significant relationships between the scales and follow-up drinking measures (Cunningham et al., 2007). The ADCQ was administered during pre-treatment at the Clinical Screen interview.

Dyadic Adjustment Scale (DAS)

The DAS (Spanier, 1976; Busby, Christensen, Crane, & Larson, 1995), administered at Baseline, is a 32-item measure of relationship functioning. It uses a 5 point Likert scale. Questions on the DAS fall into four subscales: a) Dyadic Consensus,

b) Dyadic Satisfaction, c) Dyadic Cohesion, d) Affectional Expression. Dyadic Satisfaction was chosen as the variable to be included in the current study due to its focus on the level of tension in the relationship, satisfaction with its current state and commitment to staying in the relationship. This scale was chosen because it is likely to be sensitive to relationships that are in distress versus those that are not.

Important People and Activities (IPA)

Parts I and II of the IPA (Longabaugh, Wirtz, Zweben, & Stout, 1998) were administered to assess the size and make-up of the women's social network; this instrument helped to determine the presence of drinkers and abstainers in the network, and the response of the network to her drinking or abstinence. The variable used from this measure in the current study was "partner support for not drinking." Reported test-retest reliability for the IPA is excellent (Longabaugh et al., 1998).

Table 1
Women and Partners' Descriptive Information, N = 102

Demographics

Age	<i>M</i> = 45.05 (9.19)
Years Education	<i>M</i> = 14.55 (2.57)
Total Children at Home	<i>M</i> = 1.23 (1.29)
Household Income	Median = \$81,500 (58,266)
Race	
White	95.1%
Non-White	4.9%

Alcohol Use, Family History, and Treatment History

Age of Onset for Alcohol Dependence/Abuse	<i>M</i> = 33.31 (10.89)
Proportion of Pretreatment Days Abstinent	<i>M</i> = 33.45 (28.50)
Alcohol Diagnosis:	
None	8.9%
Abuse	1%
Dependence	90.1%
1 st Degree Relative with Alcoholism:	
None	30.4%
1 or more	69.6%
Alcohol Treatment History	
Within last 90 days	18.6%
Lifetime (excluding past 90 days)	20.6%
None	60.8%

Table 1 Continued

<i>Axis I Diagnoses (excluding Alcohol Dependence/Abuse)</i>	
0	50%
1	24.5%
2	16.7%
3 or more	8.9%
<i>Axis II Diagnoses</i>	
0	65.7%
1	20.6%
2 or more	11.9%
<i>Pre-Treatment Motivation for Change</i>	
Perceived Costs of Change	$M = 38.96 (13.87)$
Perceived Benefits of Change	$M = 54.94 (12.87)$
Reported Total Abstinence as a Goal	51.5%
Stage of Change:	
Contemplation	78.4%
Action	21.6%
<i>Spouse Characteristics</i>	
Partner Age	$M = 48.48 (10.32)$
Alcohol diagnosis	
Heavy drinker	
No	83.3%
Yes	16.7%
Partner Age of Onset for those with Alcohol Dependence/Abuse	$M = 23.79 (9.71)$
% With Any Axis I Diagnoses	7.8%
% With Any Axis II Diagnoses	12.7%
<i>Relationship satisfaction (DAS sum)</i>	
Woman	$M = 101.13 (22.01)$
Partner	$M = 102.85 (19.16)$

Table 1 Continued

<i>Marital Status</i>	
Married	89.2%
Not Married	10.8%

Note. Standard deviations appear in parentheses next to means, where applicable.

Procedures

Pre-treatment

Since the secondary analysis in the current study only used data from the pre-treatment portion of the larger study, pre-treatment procedures are described in most detail.

Telephone Screen

Women who responded to the newspaper advertisements were screened for about 10 minutes during an initial telephone interview. Telephone screens were administered by trained master's-level social workers, advanced graduate students in doctoral psychology programs, doctoral level psychologists or trained bachelor's-level program interviewers. During the telephone screen, women were asked about relationship status, partner availability to participate, last alcohol use, name and contact information, age, years of drinking, including years of problem drinking, drug use in self or partner, including problem drug use. If eligible and interested, the woman and her partner scheduled a conjoint clinical screening interview.

Clinical Screen

The clinical screen interview (CS) was a 90-120 minute, in-person, semi-structured assessment session where couples were assessed together and then separately. CS administrators were master's-level social workers, advanced graduate students in

clinical psychology or doctorate-level psychologists. Each partner was administered a hand-held breathalyzer at the start of the CS and it was established that this would be the norm at each subsequent meeting, and that a BAC of .05 would result in rescheduling a session. As part of the Clinical Screen Interview, women completed an intake form (including demographic information) and consent forms and procedures approved by the Rutgers Institutional Review Board (IRB). Additionally, the completed a number of paper-and-pencil self-assessment questionnaires on domestic violence in the past year, conflict resolution, motivation for abstinence, stage of change, emotional distress in past week, and drinking goal. During the clinical screen interview, couples were asked about reasons for seeking treatment and sources of motivation for seeking treatment, recent drinking pattern to assess for need for detoxification, recent consequences of alcohol use and other concerns. Both members of the couple were administered the alcohol and drug sections (current of the SCID (First et al., 2002) a SCID brief psychotic screen (First et al., 2002) which was followed up on with the SCID in more detail, if screening was positive. The Mini-Mental State Examination (Folstein et al., 1975) was administered, and then each spouse was interviewed separately about domestic violence if there had been any self-reported indication of this. Interested and eligible women were then scheduled for a baseline interview.

Baseline Interview

The baseline interview (BL) took approximately 3 hours and was administered by bachelors, masters or doctoral level research interviewers. Both members of the couple completed the Timeline Followback Interview (Sobell & Sobell, 1996) jointly, followed by a baseline interview that was adapted from the Form-90 (Miller, 1996) to assess

psychosocial functioning such as employment and living situations. The SCID I and II (First et al., 1996, 1996a) were administered to each partner separately. Additional semi-structured interviews, including the Important People and Activities Interview (Clifford & Longabaugh, 1991) to assess social support for drinking and abstinence, were administered at that time. Upon completion of the baseline interview, participants were paid \$50 for the interview were randomized to either the Couples CBT or the Individual CBT treatment condition, and told which treatment they had been randomized to.

Treatment

More detail about treatment, follow-up and outcomes is reported in McCrady et al., (2009). Treatment was manual-guided and consisted of 20 scheduled sessions over six months (McCrady & Epstein, 1997). Treatment was administered by one of several masters or doctoral level psychologists. Women attended an average of 15.39 (SD = 5.74) sessions.

Follow-up

Telephone follow-up interviews were conducted at 3, 9, and 15 months post-baseline; in-person follow-up interviews were conducted at 6, 12, and 18 months post-baseline. TLFB data utilized in this study were collected at each of these follow-up points. Partners were contacted separately for interviews. Couples were paid \$25 per telephone interview and \$50 per in-person interview. Figure 1.

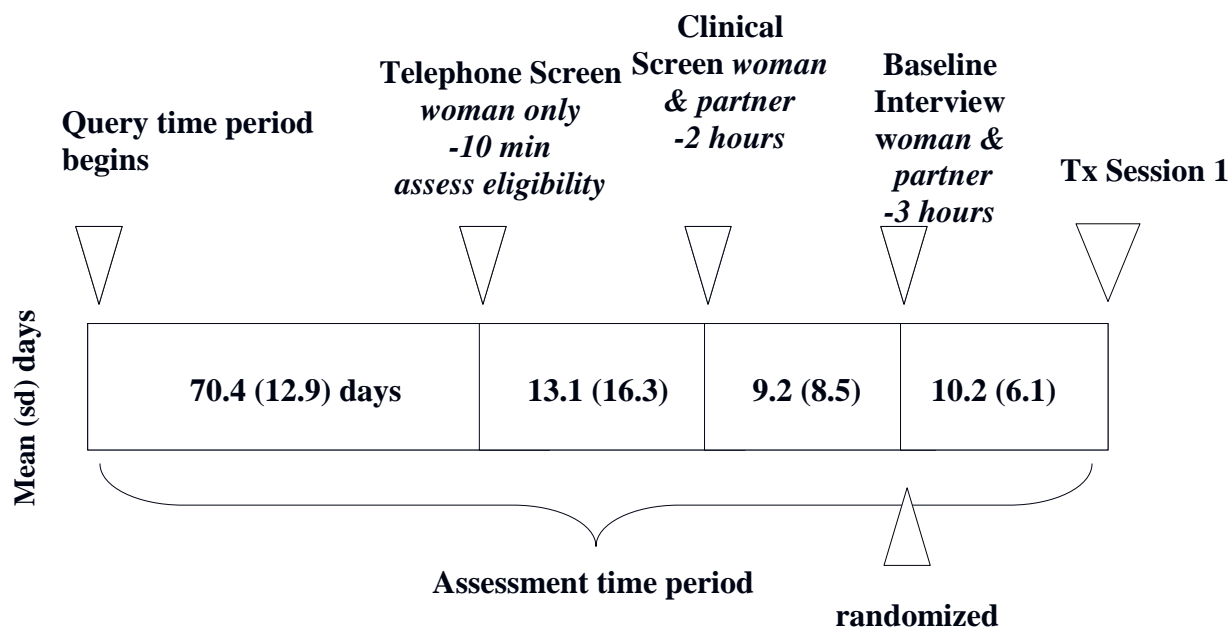


Figure 1. Timeline of all pretreatment contact with participants. From “Client factors associated with pre-treatment drinking cessation in women with alcohol dependence,” by F.S. Graff, C. Cumes, E.E. Epstein, B.S. McCrady, S. Cook and M. Drapkin, June, 2009. Poster presented at 32nd annual scientific conference for the Research Society on Alcoholism, San Diego, CA.

Data Analysis

Data were drawn from the Women's Treatment Project I study (McCrary et al, 2009). The present study builds on a secondary analysis of the McCrary study by Epstein and colleagues (2005).

Statistical Models

Chi Square tests were used to test differences between pre-treatment abstinent and non-abstinent women for dichotomous predictors (lifetime and 90 day treatment history, having a goal of abstinence, partner heavy drinker, treatment condition, treatment preference, match between treatment preference and condition). As all other predictors were continuous, differences between the groups were tested using independent samples t-tests. Because of the large number of statistical tests conducted, an alpha level of .01 was used to correct for the possibility of Type I errors.

All significant predictors were added simultaneously to a multivariate logistic regression with pretreatment abstinence as the outcome variable. This allowed us to examine the relative importance of each predictor while controlling for the effect of the others. The full model was tested against a more parsimonious model removing one non-significant predictor at a time and testing for significant loss of model fit. If the model fit did not become significantly worse after removing the non significant predictor, it was omitted from the final model.

CHAPTER III

RESULTS

1. Person Centered Variables

1a. Demographics.

Comparisons between the women who showed pre-treatment abstinence versus those who drank during pre-treatment indicated no significant differences in terms of age ($t(100) = -.38, p > .05$), education level ($t(100) = -.156, p > .05$), number of children at home ($t(98) = .830, p > .05$), or income ($t(100) = 1.343, p > .05$).

1b. Alcohol use factors.

Age of onset of alcohol abuse or dependence diagnosis was not significantly different for pre-treatment abstinent versus non-abstinent women ($t(99) = .344, p > .05$). Drinking severity, measured as sum of alcohol dependence symptoms on the SCID, did not differ significantly for pre-treatment abstinent versus non-abstinent women; current: $t(99) = .342, p > .05$, lifetime: $t(99) = .012, p > .05$. Non-abstinent women had significantly fewer days abstinent prior to the telephone screen than abstinent women, $t(75.6) = -3.835, p < .001$. Family history of alcohol problems, defined as percentage of first degree relatives with alcohol problems, was also not significantly different between the two groups ($t(100) = -1.521, p > .05$).

1c. *Psychopathology.*

There were no significant differences in number of psychological diagnoses between pre-treatment abstinent versus non-abstinent women; Axis I: $t(100) = 1.417, p > .05$, Axis II: $t(100) = .571, p > .05$.

1d. *Treatment history.*

Treatment history was not significantly different for pre-treatment abstinent versus non-abstinent women; lifetime: $\chi^2(102,1) = .001, p > .05$, past 90 days: $\chi^2(102,1) = 1.544, p > .05$.

1e. *Pre-treatment motivation.*

There was a significant difference between pre-treatment non-abstinent and abstinent women in their ratings of costs of change in their drinking habits, $t(97) = 2.867, p < .01$. Non-abstinent women reported significantly greater costs of drinking cessation than women who were abstinent in the pre-treatment period. Similarly, non-abstinent women reported significantly lower benefits of drinking cessation than women who had become abstinent during pre-treatment, $t(97) = -3.242, p < .01$. Having a goal of abstinence was a significant predictor of pre-treatment abstinence, $\chi^2(99,1) = 7.583, p < .01$.

1f. *Relationship and partner factors.*

There was no difference in reports of relationship satisfaction between women in the pre-treatment abstinent and non-abstinent groups, $t(99) = 1.055, p > .05$. Partners of non-abstinent women had fewer abstinent days in the 90 days prior to baseline than partners of abstinent women, $t(99) = 2.578, p = .05$, but this difference failed to reach the corrected alpha level cutoff. Partners of abstinent women were not significantly less

likely to be heavy drinkers than partners of non-abstinent women, $\chi^2(102,1) = 2.027, p > .05$. There was no significant difference in partner support for not drinking between the two groups, $t(81) = -.297, p > .05$.

2. Treatment Condition/Preference Factors

2a. Treatment condition.

To test the hypothesis that women in the couples' condition were more likely to be abstinent than those randomized to the individual condition, a chi square test was conducted between condition assignment and abstinence status between baseline and session 1. Results indicated no significant difference between the two groups, $\chi^2(102,1) = 3.28, p > .05$.

2b. Treatment preference.

Next, we tested whether the woman's preference for the individual or couples' condition predicted abstinence. Results from a chi square test were non-significant, $\chi^2(69,1) = 1.156, p > .05$.

2c. Treatment preference and condition match or mismatch.

Additional chi square tests were conducted to test whether match on treatment preference and assigned condition was associated with greater pretreatment abstinence than a mismatch. Results showed no significant relationship between those who were matched to their treatment preference and abstinence, $\chi^2(69,1) = .521, p > .05$. When taking into account treatment type along with match/mismatch (*e.g.* a participant expressed a preference for the couples condition and was matched to the couples-based intervention), there was no difference between the couples preference/couples condition group and the others, $\chi^2(69,3) = 6.996, p > .05$.

Figure 2 shows a graphic representation of all four factors tested that significantly differentiated pretreatment abstinent from non-abstinent women. Tables 2 and 3 present statistical information for chi square tests and *t* tests, respectively.

Table 2
Tests of differences between abstinent and non-abstinent women – all dichotomous variables

	X^2	<i>p</i>	<i>df</i>
Tx Hist – Lifetime	.001	.987	1
Tx Hist - Past 90 days	1.544	.307	1
Abstinence Goal	7.583	.008	1
Spouse Heavy Drinker	2.027	.188	1
Randomized Tx Condition	3.279	.077	1
Tx Preference	1.156	.329	1
Tx Match – basic	.521	.626	1
Tx Match – specific	6.996	.072	1

Table 3
Tests of differences between groups of abstinent and non-abstinent women – all continuous variables

Variable	Abstinent	Not Abstinent	<i>T</i>	<i>df</i>
Age	45.09 (8.715)	45.02 (9.632)	-.38	100
Years Education	14.598 (2.715)	14.518 (2.472)	-.156	100
Children at Home	1.111 (1.265)	1.327 (1.320)	.830	98
Household Income	86,949.17 (53,950.78)	102,455.38 (61,176.08)	1.343	100
Onset for Alc. Dep/Abuse	32.89 (11.183)	33.64 (10.732)	.344	99
Current Alc Dep Severity	5.22 (1.475)	5.32 (1.428)	.342	99
Lifetime Alc Dep Severity	5.71 (1.202)	5.71 (1.375)	.012	99
Percent of 1 st Degree Relatives w/Alcohol Probs.	30.57 (23.885)	23.14 (25.283)	-1.521	100
Axis I Diagnoses	.72 (1.068)	1.05 (1.285)	1.417	100
Axis II Diagnoses	.50 (.960)	.61 (.928)	.571	100
Pre TS % Abstinent Days	42.286 (30.346)	21.408 (21.683)	-3.835**	75.60
Perceived Costs of Change	34.643 (12.082)	42.407 (14.346)	2.867*	97
Perceived Benefits of Change	59.412 (11.187)	51.357 (13.094)	-3.242*	97
Relationship Satisfaction	98.560 (20.951)	103.205 (23.234)	1.055	99
Spouse % days abstinent	75.267 (29.653)	58.909 (33.417)	-2.578†	99
Spouse encouragement for not drinking	4.46 (.756)	4.41 (.844)	-.297	81

Note. † = $p < .05$, * = $p < .01$, ** = $p < .001$; Standard deviations appear in parentheses below means.

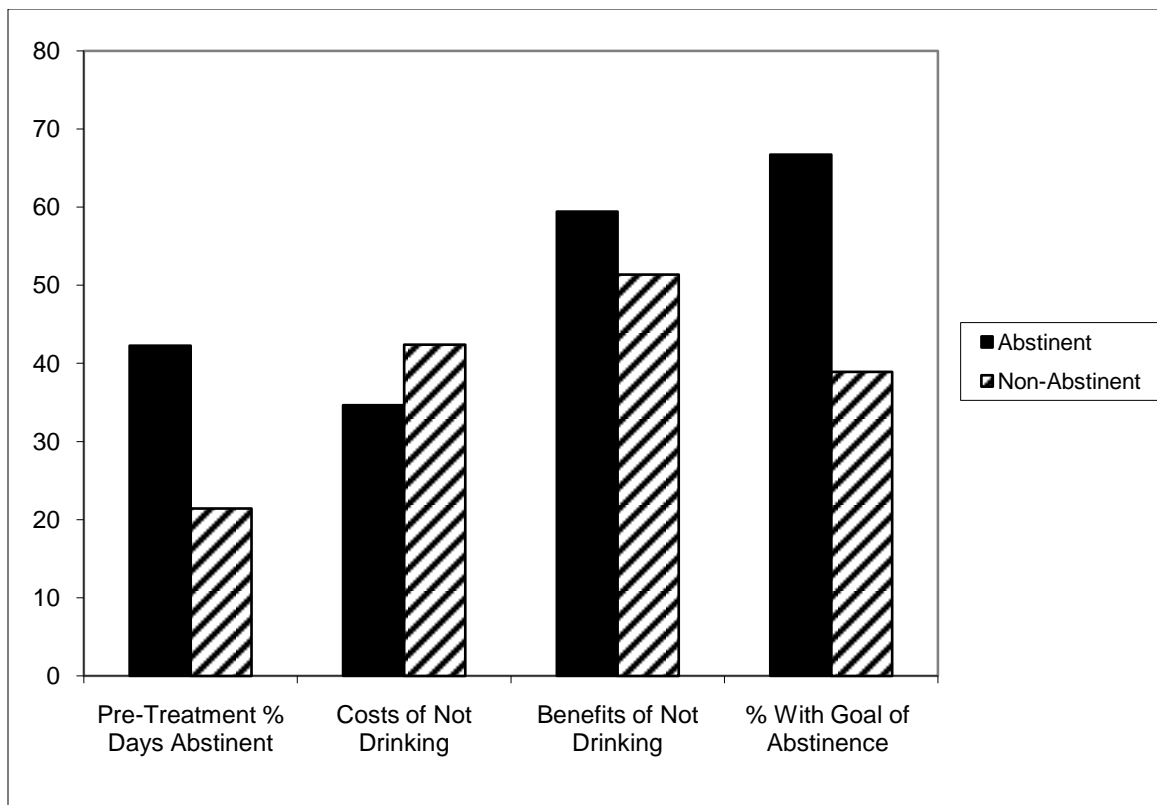


Figure 2. Characteristics that significantly differentiate women who became abstinent before treatment versus those who did not. All values represent mean differences except for the Abstinence Goal variable, which is a frequency measure (percent) as the variable was dichotomous.

3. Logistic Regression Results

Based on the exploratory results comparing the abstinent and non-abstinent groups, four predictors emerged as significant in differentiating the two groups: women's reports of the costs of changing alcohol dependent behavior (COSTS); benefits of changing the behavior (BENEFITS); percentage of abstinent days prior to the telephone screen (PRETSPA); and having a goal of abstinence before treatment (ABSTGOAL).

A logistic regression was conducted to determine the relative importance of these four indicators (COSTS, BENEFITS, PRETSPA, and ABSTGOAL) in predicting pre-treatment abstinence versus nonabstinence group membership. Results indicated that having a goal of abstinence (ABSTGOAL) did not emerge as a significant predictor in a model including all the others.

A more parsimonious model with the three significant predictors (COSTS, BENEFITS, and PRETSPA) was compared to the four-predictor model with the non-significant ABSTGOAL predictor. A comparison of the model fit statistics indicated no significant difference between the two models, $\Delta\chi^2(1) = 2.397$, $p > .05$. The more parsimonious model with the three significant predictors was therefore selected and will be interpreted below.

Table 1 provides the coefficients and their exponentiated values (odds ratios) for each of the three predictors. Results of the multiple logistic regression indicated that cost ratings significantly predicted the probability of being in the abstinent group. For every one unit increase in rating of costs of changing drinking behavior, the odds of abstinence (versus non-abstinence) decreased by a factor of .964. Ratings of the benefits of change and percentage of abstinent days prior to the telephone screen were both significant and

positive predictors of pre-treatment abstinence. For every unit increase in ratings of benefits of change, the odds of abstinence versus non-abstinence increased by a factor of 1.059. For every percentage point increase in pre-telephone screen percent days abstinent, the odds of abstinence (versus non-abstinence) increased by a factor of 1.029. This model provided a significantly better fit to the data than a model with no predictors, $\chi^2(3) = 26.632$, $p < .001$, and correctly predicted 71.7% of the observed cases. Coefficients and odds ratios for the final model are presented in Table 4. A graphic representation is presented in Figure 3.

Table 4
Logistic regression coefficients and exponentiated values (odds ratios) of three client indicators predicting pretreatment abstinent versus non-abstinent groups.

Indicator	Odds Ratio	Coefficient
COSTS	.964	-.037* (.018)
BENEFITS	1.059	.058** (.021)
PRETSPA (% pre-telephone screen abst days)	1.029	.029** (.009)
Constant	.055	-2.909† (1.382)

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$. Standard errors are below coefficient values in parentheses.

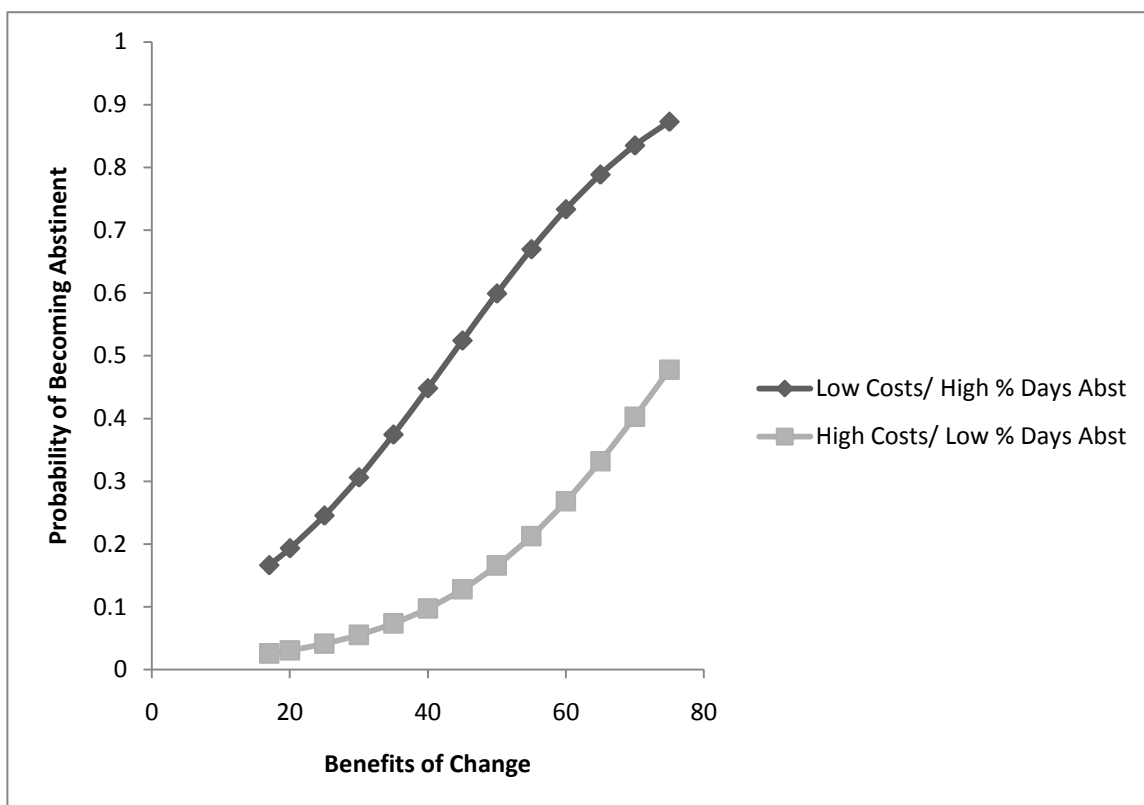


Figure 3. Probability of becoming abstinent from baseline assessment to the day before treatment is predicted by women's percent days abstinent prior to telephone screen and their ratings of benefits and costs of changing alcohol consumption behavior. Low and high values of costs and % days abstinent are the 25th and 75th percentile values, respectively. Higher ratings of benefits, higher percent days abstinent, and lower ratings of the costs of change are all associated with an increased probability of being abstinent between baseline and treatment. Women who perceived lower benefits associated with change, who were abstinent for fewer days before contacting the study, and who rated the costs of change higher were less likely to become abstinent from baseline to treatment.

CHAPTER IV

DISCUSSION

This exploratory study was built on prior research (Epstein et al., 2005), which found that nearly half of women who participated in a trial of treatment for alcohol use disorders (McCrary et al., 2009) became abstinent before treatment began. The current study examined what characteristics differentiated the two groups: women who became abstinent during pretreatment and those who did not.

The primary finding in this study was that while demographic, drinking-severity, psychopathology, treatment and relationship satisfaction variables did not predict whether women fell into the pre-treatment abstinent group, motivation variables, most specifically the women's perceptions of high benefits and low costs of drinking cessation, significantly predicted pre-treatment abstinence, even when controlling for other variables. Since women in the pre-treatment abstinent group were drinking less even before calling the study for the Telephone Screen, it is evident that motivational differences existed before women entered the study. However, in the original study, Epstein et al., 2005, did control for pre-Telephone Screen drinking frequency in their evaluation of pre-treatment assessment effects and found that overall, subjects further reduced drinking after each of the pre-treatment assessments (Telephone Screen, Clinical Screen and Baseline), regardless of their pre-Telephone Screen drinking levels. Additionally, when controlling for pre-TS abstinence in the regression equation, the perceptions of costs and benefits of drinking cessation remained significant predictors of

pre-treatment change. Therefore, it seems probable that pre-existing motivation and assessment effects were both occurring.

These findings have important clinical implications, contributing evidence that cognitive perceptions of change predict actual change among women entering pre-treatment for alcohol dependence. They may even suggest that developing a positive perception of change (higher benefits and lower costs) could be a mechanism that is not unique to any one treatment, but may be a significant step in the change process.

This primary finding that women in the pre-treatment abstinent group were more likely to rate benefits of drinking cessation high and costs low is consistent with hypothesized mechanisms of change that are put forth by the Natural Recovery and Motivational Interviewing Literatures. Sobell et al. (2002) propose that in natural recovery, behavioral change occurs when a decisional balance tips in the direction of change. Additionally, Motivational Interviewing (Miller & Tonigan, 1997) uses a decisional balance to motivate change at the beginning of treatment. A link can also be made to the Transtheoretical Model (Prochaska, DiClemente, & Norcross, 1992) which considers motivational factors and a person's readiness to change: another study related to the same parent study on which the current study is based (Share, McCrady, & Epstein, 2004), found that women who rated higher benefits of change relative to lower costs were more likely to be identified as being in the "Action" stage of change according to the Readiness to Change Questionnaire (RCQ). Taken together with the current study, they provide support for the Transtheoretical "stages of change" Model in that they indicate that women in the pre-treatment abstinent group were more likely to be in the "Action" stage of change, than women in the non-abstinent group who were more likely to be in

the “Contemplation” stage. This supports a link between cognitions about change, stage of change and behavior.

The natural recovery and MI literatures maintain that having clients respond to questions about the pros and cons of drinking cessation might strengthen motivation to be abstinent. In this case it seems likely that responses to questions about the pros and cons of drinking cessation during the pre-treatment assessment period (Clinical Screen) reflected preexisting motivation to change and possibility also strengthened motivation to become or remain abstinent.

We do not have enough information to say unequivocally whether the evidence of motivation occurring before women entered the study supports one of the hypotheses outlined by Epstein et al. (2005) that seeing an advertisement for the study and then deciding to enter treatment contributed to pre-treatment drinking cessation (Sobell et al., 2003), since we do not know at what point women made the decision to enter treatment. It is possible that women had written down the number to contact the study or carried around the newspaper clipping about the study for months before they actually made contact, or that they contacted the study as soon as they read about it. Since we do know that many of the women who stopped drinking during pre-treatment had already had a significantly higher percentage of abstinent days before making contact with the study, it would be important to know at what point they first learned of the study in order to determine whether motivation preceded or followed exposure to the study advertisement. Perhaps what is more relevant is to consider that all of the women in the study were motivated to make a decision to contact the study and enter treatment, however the

quality of that pre-treatment motivation seems to have differed between women who did and did not become abstinent soon after entering the study.

Having a goal of abstinence was found to be a significant predictor of being in the pre-treatment abstinent group. Studies examining the relationship between drinking goal and final outcome have not generally found a significant relationship between these two, with some exceptions. Hodgins (1997) found in a sample of severe problem drinkers that an abstinence goal predicted slightly better outcomes. Since the sample in the current study consisted almost entirely of women with the more severe DSM-IV diagnosis of alcohol dependence, the goal of abstinence may have particular importance for this sample. Although a goal of abstinence was shown to differ significantly between the abstinent and non-abstinent groups, it was not a significant predictor of pre-treatment abstinence when controlling for other factors. In clinical terms, it does provide some information about a possible relationship between an abstinence goal and motivation for change right before treatment begins. It must be noted that since the period of time during which the goal of abstinence was set and the period in which women became abstinent fell close together, this finding may not do much more than say that women tended to act according to their goal, at least in the time period surrounding the setting of that goal.

Partner percent days abstinent during the pre-treatment period was greater within the group of women who showed pre-treatment drinking cessation, although it failed to meet the alpha level of .01 that was set to correct for the number of tests run and to reduce the risk for type I error. The other hypothesized partner variables did not differ between the two groups. Relationship satisfaction did not predict pre-treatment abstinence. Partner support for not drinking also failed to be a significant predictor. These

findings suggest that actual current partner drinking behavior rather than what partners said or thought about drinking may be more likely to be associated with the women's abstinence, but that even partner behavior is less significant than the thoughts and actions of the women themselves.

The lack of significant findings among demographic variables ran counter to hypotheses and suggests that there is no fundamental difference in who the women are in each group, and that the differences in their responses have to do with less static variables than demographics. The sample was fairly demographically homogenous, which may have reduced sensitivity of demographic variables, however demographic variables showed no trend even towards significance.

Psychopathology was also not a significant predictor of women belonging to the pre-treatment abstinent or non-abstinent group. This was a highly comorbid sample with about 50% of the sample meeting criteria for additional disorders (Drapkin, 2007). Perhaps the homogeneity of the sample and lack of statistical power reduced sensitivity, however these nonsignificant findings strongly suggest that comorbid anxiety, mood or personality disorders do not predict pre-treatment drinking cessation. This finding has clinical value since most clients in outpatient substance use treatment settings carry comorbid diagnoses, and these findings offer encouragement that more malleable motivational variables can trump more entrenched ones such as demographics or the presence of co-occurring disorders.

More surprising is the fact that variables that are usually implicated in drinking severity including age of onset, drinking-related symptoms and family history were also nonsignificant. More problematic drinking has been associated with decreased likelihood

of recovery without treatment; in the Natural Recovery Literature, less severely dependent drinkers were found to be more likely to stop drinking “spontaneously,” without treatment (Sobell, et al. 1996). This could indicate a limitation in trying to understand pre-treatment change through the natural recovery literature, since the women in this study had severe enough drinking problems they would have been unlikely to experience a spontaneous recovery. However, the claim was never made that spontaneous recovery and pre-treatment drinking cessation are the same thing, merely that they may be mediated by similar processes. Again, it is important to note that drinking severity variables may have been nonsignificant because the sample of women was extremely homogenous when it came to drinking severity, with all but one person meeting criteria for alcohol dependence.

Previous treatment did not significantly predict pre-treatment abstinence. This could mean that previous treatment was not a variable that differed between the two groups. It is also possible this variable may have been confounded by two different phenomena that may have canceled each other out: several studies have found that patients who receive more substance abuse treatment generally do better (Ouimette, Moos, & Finney, 1998), however there is also evidence to suggest that previous failed treatment is unlikely to be followed by a successful outcome, particularly in the case of severe and entrenched alcohol dependence (Bien et al. 1993). It is possible that the previous treatment finding for the current study was nonsignificant because the variable “previous treatment” does not provide enough information about the intensity, frequency or success of previous treatments to accurately reflect the relationship of previous treatment and pre-treatment abstinence.

No significant findings emerged regarding randomization to treatment or the relationship between randomization, condition and match. Contrary to the hypothesis that women in the couple condition would be more likely to show pre-treatment abstinence or that treatment preference would mediate outcome, there was a trend toward indicating that women randomized to the couple condition were significantly less likely to show pre-treatment abstinence. This finding fails to offer support for the hypothesis that pre-treatment change occurred because of social networking and the commitment to participate in the presence of one's partner. Results showed no greater likelihood of being in the pre-treatment abstinent group for women who received the treatment condition they preferred. This finding could offer evidence, countering concerns expressed in the treatment-matching literature for depression that failure to match with treatment preference undermines motivational variables early in treatment (Kwan, Dimidjian, & Ravzi, in press). When taking into account treatment type that women were randomized to as well as initial preference, there was one finding that approached significance in a direction opposite to expected: women who preferred the couple condition and were randomized to it were less likely to be abstinent than women who either preferred the individual condition and were matched or mismatched and women who preferred the couple condition and were not matched to it. Due to methodological problems with treatment matching analyses, findings are difficult to interpret and likely to be statistical artifacts. They lack statistical power since they were based on a smaller sample of 69 women, for whom preference data were available; this smaller sample had to be divided into 4 groups to examine the relationship between preference and match. Additionally, matching data are based on a post-hoc evaluation of treatment preference in the women

where interviewers and clinicians identified what the women's original expressed preference had been. Finally, due to the exploratory nature of this study, any of the significant findings above could be the result of type 1 error since so many cross tabulations were run and so few were significant.

It is interesting that when the 4 significant variables: costs, benefits, women's percent days abstinent before contacting the study and doing the Telephone Screen, and a goal of abstinence were entered into a logistic regression equation, having a goal of abstinence was the one factor that did not emerge as a significant predictor of the pre-treatment abstinence outcome variable. This seems to indicate that perceptions about the change process (pros and cons) as well as previous behavior (pre-Telephone Screen days abstinent) are more important than the setting of a goal, and may be a better indicator of actual motivation for change than a goal statement, although this was the only dichotomous variable of the 4 and may have been weakened by this fact.

Limitations

Several limitations to this study have already been referred to including that it is a post-hoc secondary analysis. Also, due to its exploratory nature, it was difficult to determine which variables to examine in relationship to the outcome variable and so the decision to run numerous tests may have increased the chance of type 1 error. Sample size was a limitation particularly for tests that involved treatment preference and not only used a smaller sample but divided that sample into four groups. There are also clear limitations to the choice of outcome variable "abstinent at pre-treatment" which was operationalized as a rating of abstinent or non-abstinent based on 100% abstinent days between the baseline interview and start of treatment. One problem with using a

dichotomous outcome variable is that “alcohol use” is not a dichotomous variable (Vinson, 1997) but problematic alcohol use is usually evaluated through several more nuanced measures. Research has repeatedly shown that treatment outcomes should look at drinking reduction as well as abstinence, and that consequences and other more complex factors also play a part (Hodgins, 1997). Additionally, the time period measured in the outcome variable is relatively small. However, a specific purpose of this study was to understand more about how and why so many women in the Epstein et al. (2005) study stopped drinking before treatment and the outcome variable for the current study was the one used in Epstein’s finding. It is a useful variable clinically, since abstinence has clinical meaning for individuals in treatment. Finally, there was also value in having a single, focused outcome variable when the two groups were being compared along so many different domains.

Future Directions

As Finney (2007) suggests, studies such as these can help guide researchers toward which variables to focus on when planning complex studies of mechanisms of change. Although this study provides no definitive answers, it does offer new directions: It suggests that variables occurring before entering a study are likely to be having an impact during the pre-treatment period. Although it is tempting to avoid studying “non-specific factors” that occur outside of treatment, these factors are indeed specific and important. Research designs that focus more on identifying sources of motivation in people who are entering trials may shed light on these pre-treatment factors.

This study lends support to the possibility that weighing costs and benefits of abstinence may be closely linked to a fundamental mechanism of change. The finding is

worthy of further study since it may help define the type of motivation that is likely to lead to change, and may possibly be used to enhance that motivation. Another finding worthy of further inquiry relates to partner abstinence; partners of women in the pre-treatment abstinent group showed a trend toward a higher percentage of days abstinent during the period between the Telephone Screen and treatment. This variable did not meet the .01 alpha level, but as the only partner or relationship variable that approached significance, it is worthy of further attention. If there is a mechanism of action within the partner abstinence variable, what could it be? Did some couples work together to become abstinent in the time before entering treatment because of a joint desire to make change? Did women feel supported by their partners on abstinent days? Further investigation may be warranted to determine whether there may be some impact from spousal abstinence on women with alcohol dependence. If so, it might offer information about mechanisms of change in couple therapy for alcohol dependence, which already has well-documented support, but is not as yet understood in terms of mechanisms of action. It might lend more weight to the already existing component of ABCT where couples problem-solve around creating an abstinent-friendly environment for the woman. With more investigation, it could even support efforts towards non-threatening facilitation of partners making changes in their own drinking, although such a focus needs to be counterbalanced by the possibility that male partners will be less likely to engage in treatment with their female partners if they believe they may also need to make changes in their own drinking behavior.

Conclusion

This study produced some unexpected findings around the types of variables that predicted change in a large proportion of the sample of women entering a study to treat alcohol dependence. The findings point to a conclusion that there was little difference between the women who became abstinent before treatment versus those who did not in most domains that describe fundamentally who the women were. Rather, the women who became abstinent before treatment appear to have reached a point in their lives where they could identify more pros of abstinence and more cons of drinking, and this, possibly in combination with the chance to participate in a study, was enough to bring about action on their parts. All the other variables that may have influenced change were not that important in this case. Rather, women's perceptions of how drinking and not drinking affected their lives were central. In clinical terms, the hopeful indication here is that change may be related to malleable, process-based factors rather than fixed factors such as demographics that are beyond the reach of treatment. Treatments such as MI have been studying "pros and cons" and paying close attention to the quality of motivation for years. These findings suggest that MI change mechanisms may be at work in other treatments or may be occurring outside of treatment. Based on this, it is worthwhile to further develop the work of Sobell et al. (2003) who have designed interventions that try to facilitate natural change processes; it may be found that one of those most important steps toward improving treatment outcomes is helping people tip the scale toward change, even before treatment begins.

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