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ENHANCING MOTIVATION TO CHANGE IN CLIENTS WITH ALCOHOL USE  
DISORDERS: VIDEO FEEDBACK AS A BRIEF INTERVENTION

By

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Enhancing Motivation to Change in Clients with Alcohol Use Disorders: Video Feedback as a Brief Intervention

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This research examined whether videotaped self-observation of drinking behavior combined with a one-session motivationally-based interview resulted in higher levels of motivation to change drinking behavior, lower levels of quantity and frequency of alcohol consumption, decreases in alcohol-related problem behaviors, and expectations of the positive effects of alcohol for individuals mandated to treatment for alcohol-use disorders. DUI offenders ( $n = 8$ ) and heavy drinking college students ( $n = 13$ ) mandated to treatment were randomly assigned to receive treatment as usual at their respective agencies or an experimental video intervention in addition to their regular treatment requirements. Participants were assessed at baseline and at one-month following treatment. Participants in both conditions self-reported significantly fewer alcohol-related problem behaviors at the one month follow-up. A non-significant trend was found between the groups over time for alcohol-related problem behaviors; participants assigned to treatment as usual reported fewer alcohol-related problem behaviors at follow-up relative to participants assigned to the experimental video intervention. An additional non-significant trend was found for movement along the stages of change. Two participants who received the video intervention regressed to previous stage levels and one participant who received treatment as usual moved forward one stage. Most participants assigned to the video intervention reported increased insight into their own drinking behavior following the video viewing. Results from this study suggest that aside from increasing awareness about drinking behavior, the data do not support the use of video self-monitoring of drinking behavior as a treatment intervention for individuals with alcohol-use disorders. Future research may want to incorporate some modified components of the video intervention into existing motivationally-based treatments as a way to increase awareness about drinking behavior.

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## Enhancing Motivation to Change in Clients with Alcohol Use Disorders: Video Feedback as a Brief Intervention

Alcohol use disorders are considered one of the most significant public health problems facing our society today (Grant et al., 2004). Eighteen million Americans suffer from alcohol abuse or dependence, and the consequences of use are manifold; they are evident at the individual, community, and societal levels (World Health Organization, 2002). Alcohol-related problems contribute to elevated risk for psychopathology, increased medical illnesses and expenses, impairment of occupational and school functioning, as well as higher rates of driving accidents and fatalities (Peterson, Nisenholz, & Robinson, 2003.) Therefore, research aimed at establishing new, more effective interventions in the treatment of alcohol use disorders is of primary importance in the field of psychology.

An intervention that holds promise and has received widespread support in the treatment of alcohol-use disorders is motivational interviewing (MI; Miller & Rollnick, 2002, 1991). As opposed to more traditional approaches to treating alcohol abuse and dependence, MI adopts a harm reduction approach as an alternative to the more traditional abstinence-based models. While many abstinence-based models adopt a “zero tolerance” approach to substance use and other high-risk behaviors, the principles of harm reduction may be conceptualized as working with individuals where they are with respect to their substance use and their motivation to change high-risk behaviors associated with their usage. In direct contrast with attempting to force individuals to incorporate changes in behaviors that they are unwilling to, or not ready to make, harm reduction is an alternative way to manage high-risk behaviors, seeking to minimize harm



by working toward reducing the negative consequences associated with continued usage of substances and engaging in other high-risk behaviors (Marlatt, 1998).

Many individuals who engage in problematic substance-use and other high-risk behaviors do not respond to abstinence-based models and are not committed to discontinuing use altogether or to changing their behaviors. Within the addiction literature there has been increasing support for emphasizing goals other than abstinence when treating individuals with alcohol use-disorders, as well as empirical support for treatments that emphasize reduced-risk or reductions in consumption (see Ambrogne, 2002, for a review).

The principles of motivational interviewing are consistent with treatments that support goals other than more traditional approaches that emphasize abstinence only. The basic tenet of MI is paradoxically to accept where the individual is with respect to his or her substance use, while simultaneously seeking to enhance motivation to change problematic substance use behavior. The goal is not to force behavior change, but instead the individual is viewed as autonomous, capable of making decisions and accepting the responsibility for changing his or her own behavior. This strategy seems to be particularly appealing to college student and mandated treatment populations that may be likely to resist confrontational interventions or interventions that stress abstinence as the only acceptable outcome. A review of the empirical literature reflects this, and interventions that incorporate the principles of MI (often termed adaptations of MI or motivational enhancement) have demonstrated success with these populations (Harper & Hardy, 2000; O'Leary Tevyaw & Monti, 2004).

Observation of the self via a videotaped experience has been utilized as a treatment intervention to promote insight into problematic behaviors as well as foster behavior change. In particular, previous studies have used video to increase insight in individuals with schizophrenia (Davidoff, Forester, Ghaemi, & Bodkin, 1998), to challenge body distortions in individuals with eating disorders (Tuschen-Caffier, Vogele, Bracht, & Hilbert, 2003; Vandereycken, Probst, & Van Bellinghen, 1992), to reduce social anxiety (Rapee & Hayman, 1996), as a means to increase responsibility and problem recognition among family members in family therapy (Kemenoff, Worchel, Prevatt, & Willson, 1995), and to provide partners in couples therapy with feedback about their interaction patterns (Alger & Hogan, 1969). Video interventions have also targeted substance use behavior, although a literature review revealed only a few studies that have investigated the use of video in the treatment of alcohol use disorders (e.g., Baker, Udin, & Vogler, 1975; Faia & Shean, 1976; Schaeffer, Sobell, & Mills, 1971; Schaeffer, Sobell, & Sobell, 1972; Vogler, Weissback, & Compton, 1977). General findings from these studies revealed that the use of video had deleterious effects, often leading to treatment drop-out or increased consumption and alcohol-related problems at follow-up.

One potential explanation for the negative treatment outcomes in some of the previous studies utilizing video interventions for substance use disorders may be that individuals experienced shame when presented with videotape of their own behavior when drinking. While treatment components varied among these previous studies, some individuals reported anecdotally that they were distressed when confronted with an image of themselves while intoxicated. In addition, some of the interventions were specifically

designed to heighten a client's sense of distress about his or her drinking. Research has emphasized the potentially damaging effects that shame can have on treatment outcomes, and many studies have found that confrontation leads to increased resistance from clients (Patterson & Forgatch, 1985; Miller & Sovereign, 1989; Miller, Benefield, & Tonigan, 1993) and results in higher levels of alcohol consumption (Miller & Sovereign, 1989; Miller et al., 1993).

Recent shifts in the field of addictive behaviors that have emphasized acceptance-based approaches (e.g., Motivational Interviewing) have been promising when attempting to treat individuals with alcohol-use disorders. With that in mind, this study seeks to integrate the two treatments, observation of oneself via videotape coupled with motivational enhancement strategies, thereby attempting to address some of the potential limitations of these previous studies.

Given that the use of video has shown promise in additional areas of research, this study seeks to promote insight into drinking behavior by giving the individual a better perspective of what he or she is like when drinking, and to discuss and explore that perspective in a brief, MI-influenced session. Insight alone does not always lead to behavior change; however, a large body of research has demonstrated that individuals progress through a series of stages on the way to recovering from alcohol-use problems, and that awareness of problems associated with alcohol use is a critical first step toward the motivation to challenge and ultimately change problem behaviors (see Prochaska, DiClemente, & Norcross, 1997).

In addition, previous research has demonstrated that the use of video in treatment can promote insight into problematic behaviors as well as foster behavior changes.

Considering that individuals can gain insight into their drinking behavior through viewing themselves on videotape, it seems reasonable to imagine that incorporating the principles that enhance motivation to change harmful alcohol use in a non-confrontational manner may minimize the shame, defensiveness, and denial associated with negative outcomes noted in previous studies that utilized video when attempting to treat individuals with alcohol-use disorders. This, in turn, may result in higher levels of motivation to change problematic drinking levels and alcohol-related problem behaviors, as well as lead to reductions in the quantity and frequency of alcohol use and alcohol-related problem behaviors.

#### *History of Alcohol and Treatment*

Beliefs about alcohol use and treatment approaches for alcohol problems have varied considerably, progressing through a series of developmental stages that correspond to the current societal view of the definition of problematic consumption. Prior to the belief that treatment was an option or even necessary, alcohol was viewed as medicinal and nutritious, and drinking was often encouraged (Rorabaugh, 1979). Even though some people imbibed excessively and experienced negative consequences from alcohol use, it wasn't until the mid 1800's when the term "alcoholic" was introduced by Magnus Huss, a Swedish physician who used the term to describe the aversive consequences of drinking (as cited by Miller & Hester, 1995). Up until that time the moral model predominated, and it was believed that the individual was personally responsible for the decision to drink. Excessive consumption and problematic consequences were viewed as the individual's responsibility and under his or her own control; thus, such excess

represented a moral failure of the person. There was no need perceived for administering any form of treatment for alcohol problems during this period, largely because it was believed that individuals could control their own drinking if they desired. Instead, social sanctions were imposed on people who were disorderly and exhibited problems from alcohol, and intoxication was viewed as a punishable crime (Connors & Rychtarik, 1989).

With the introduction of the temperance model in the late nineteenth century, it was believed that alcohol consumption was extremely dangerous, and there was no safe acceptable level of drinking for anyone who chose to use the substance. Because the effects of alcohol were considered damaging to everyone, it was not surprising that prohibition was enacted as a law. During this time there was no formal treatment for alcohol problems, and refraining from alcohol use involved the individual practicing abstinence, or government control of the cost, availability, and promotion of alcohol to the general public (Levine, 1978).

Following the legalization and reintroduction of alcohol into society, the disease model predominated. It was still believed that alcohol contributed to many problems, yet not everyone was destined to become an alcoholic; only those people who were predisposed to the illness because of biological or dispositional factors were considered to be affected. People who were believed to be alcoholics were viewed as possessing a discrete set of physical vulnerabilities and psychological characteristics that differed from those of normal individuals, and efforts at intervention involved determining who displayed these traits and ensuring that these individuals remained abstinent from alcohol (Caetano, 1987; Crawford, 1987). For those who did not share the disease of alcoholism,

however, it was considered safe to consume alcohol; therefore, moderation was an acceptable alternative.

Among those individuals who were believed to be “alcoholics,” the confrontational approach was regarded as one of the standard modes of therapeutic intervention to treat alcohol-related problems, despite its lack of empirical support. A common misconception was that individuals who exhibited problems with alcohol not only suffered from a disease which they were powerless to control, but they were also considered to be using defenses of rationalization, denial, and projection. It was thought that the only effective means to combat these defenses was to confront individuals directly, helping them to accept the label of “alcoholic” or “addict” (Miller, 1985). Much of the psychological literature reviewed from the 1950’s through the 1980’s emphasized this approach to addressing substance-related problems. As early as 1958, treatment for drug addiction was managed with “attack therapy” where group members vociferously castigated each other, with staff and residents contributing (Kennard, 1983). It was noted that expressing anger and frustration in this overt way was supposed to result in “discharged tension” and breaking down denial, leading to “more open and honest discussion” of interpersonal conflicts and emotional issues. Other treatments at this time often used abusive punishments for violating rules of treatment, extending to shaving residents’ heads and hanging shaming signs around their necks (Kennard, 1983). Although the latter was considered extreme and largely ineffective, most treatment providers continued to agree that the denial of alcohol problems was a major obstacle to effective treatment, and that the only way for the “alcoholic” to understand the gravity of

alcohol problems was to arouse anxiety in the individual (Fewell & Bissell, 1978; Twerski, 1983).

While some individuals seemed to benefit from the confrontational approach, others did not respond favorably, and many subsequent studies have confirmed that confrontational therapy is predictive of treatment drop-out and high relapse rates (Moos, 2005). In a comprehensive literature search of over 700 medical and psychological articles that examined relapse and deterioration rates following substance abuse treatment from 1990 to 2004 (see Swearingen, Moyer, & Finney, 2003), some main contributing factors to increased alcohol consumption following treatment were confrontation, criticism, lack of bonding with the therapist, and high emotional arousal (Mohr, 1995). In addition, in a study that examined how therapists' directive style interacted with clients' reactivity (i.e., the resistance to relinquishing control in interpersonal situations) in treating alcohol-use disorders, it was found that increased directiveness of the therapist (defined as the use of closed-ended questions, interpretation, confrontation, initiating topics, addressing resistance, and teaching) resulted in increased drinking for clients who exhibited medium to high levels of reactance, whereas this effect was not found for clients with low levels of reactance at baseline (Karno & Longabaugh, 2005). Similarly, in one study that examined the effects of therapist style on client resistance and drinking behavior, it was found that a directive-confrontational counseling style (emphasizing alcohol-related problems, giving direct advice, disagreeing with clients, minimization of problems) when compared with a more client-centered style (responding in an empathic fashion and using reflective listening) was predictive of resistance, and that the more the therapist confronted, the greater the resistance of the client. In addition,

the directive-confrontational style of the therapist predicted drinking behavior at the one-year follow-up point; the more the therapist confronted, the more the client drank later (Miller, Benefield, & Tonigan, 1993).

Conversely, a more empathic counseling style and a positive alliance with the therapist have led to greater treatment compliance and outcome. In one study, the degree of empathy accounted for half of the variance in alcohol consumption at 12 months (Miller & Baca, 1983). The degree to which clients express a desire to make changes in their drinking is also greatly influenced by counseling style. Counselors who switched back and forth between a confrontational and reflective style in 12-minute blocks during a session found that resistance behaviors increased significantly when clients were confronted and decreased when the counselors used reflective listening (Patterson & Forgatch, 1985). Additionally, among individuals in treatment for substance use disorders, a positive therapeutic alliance is associated with better outcomes (Lebow, Kelly, Knobloch-Fedders, & Moos, 2005). In a study that examined the reasons for client deterioration following alcohol-use disorder treatment in project MATCH, the authors found that after controlling for some patient risk factors that are generally associated with deterioration, fewer treatment sessions and a poor therapeutic alliance were predictive of a return to heavy drinking (Ilgen & Moos, 2005) and that a stronger therapeutic alliance predicted increased participation in treatment (Connors, DiClemente, Longabaugh, & Donovan, 1997). Furthermore, Timko, Finney, & Moos (1995) found that among individuals entering alcohol treatment for the first time, 31% experienced negative effects and dissatisfaction with treatment. These individuals reported that their counselor did not understand them or their problems, they gained little insight into their drinking problem,



and they did not learn how to cope with urges to consume alcohol. An additional study in the Department of Veterans Affairs that compared clients who benefited from treatment with those who deteriorated found that those who did not benefit from treatment described the program as less supportive and less oriented toward self-understanding (Ouimette, Finney, & Moos, 1997).

Taken together these findings suggest that overall, clients fare better with a supportive, accepting, and non-confrontational approach to treatment, and that many clients who are more resistant do not benefit from a directive, confrontational style. Given that a large proportion of substance abusers are in treatment involuntarily and are often resistant to treatment, an approach that emphasizes a supportive and empathic alliance with the therapist may be particularly appealing and the best alternative for this population.

#### *Recent Advances in Treatment for Alcohol Use Disorders*

Evolving out of abstinence-based models that have traditionally focused on alcohol abuse and dependence as an illness or disease that requires a “one size fits all” approach to treatment, researchers and clinicians began to expand their understanding of the addictive process to take into account individual differences that were not accounted for in the more traditional medical model. Rather than conceptualizing all people who had alcohol problems as “alcoholics” requiring the same treatment approach, it became apparent that people differed with respect to the problems they experienced from alcohol use. Not all individuals who consumed alcohol were severely dependent upon the substance; some were able to drink in moderation, and many did not experience

withdrawal symptoms when stopping drinking (Marlatt & Witkiewitz, 2002). In addition, the standard inpatient treatment approach was effective for some, but not all, individuals who exhibited alcohol problems.

Because of the rising costs associated with mental health care (French, 2000; Holder, 1987), the limitations of inpatient treatment, and the discovery that brief interventions led to substantial benefits when introduced in clinical trials (Miller, 2000; Sobell et al., 2002), brief interventions have become more prevalent and are considered a more parsimonious approach to treating alcohol-related problems.

Additionally, with the transtheoretical model (Proshaska & DiClemente, 1984) becoming a dominant model in the field of substance abuse treatment, it is recognized that extended interventions may have limited effects if the client remains in one stage of change (e.g., precontemplation or contemplation), and that brief interventions may be effective in moving clients' thoughts and behaviors to the next stage.

Currently, there are many treatment options to choose from that have been found to be both efficacious and effective, although no single treatment outperforms any other (Miller & Hester, 1995). Of the treatments available presently, the most empirically supported and widely studied have been behavioral skills based and cognitive interventions, environmental and relationship based, psychopharmacological, and motivational influenced therapies. In addition, twelve-step treatments are prominent and frequently utilized but have received less empirical support.

Derived from social learning theory, interventions that focus on skills training involve the acquisition of new skills to learn how to cope effectively with life situations that lead to drinking decisions, as well as strategies to prevent relapse (see Miller et al.,

1995; Read, Kahler, & Stevenson, 2001 for reviews). Social learning theory posits that there is a reciprocal interaction between the environment, behavior, and thoughts of the individual, and that each of these together with the others influences the formation, shaping, and maintenance of the behavior (Bandura, 1977). Individuals learn about alcohol use through modeling and imitative behavior, thoughts and beliefs about the effects of the substance, and finally through the reinforcing effects of the drug itself. For individuals in treatment for alcohol-related problems, teaching skills that target exposing individuals to the cues associated with alcohol use and implementing more adaptive responses to cope with urges and cravings have been found to be effective in reducing problematic alcohol use (see Monti et al., 1993; Monti & Rohsenow, 1999).

Cognitive-based interventions have evolved over the past thirty years when it became apparent that decisions to drink were not only based on the physiological effects of the substance, or solely on behavioral reinforcement principles, but are also motivated by information stored in memory about the expected effects of alcohol. These expectations about the effects of alcohol on the self were found to influence subsequent drinking decisions and to remain stable over time (Brown, Goldman, Inn, & Anderson, 1980). Although numerous studies have been conducted that have determined that both positive and negative expectancies contribute to drinking decisions (Jones, 2004), attempts to target and reduce these expectancies in treatment have been difficult, and the results are equivocal. More often, interventions that combine a cognitive and behavioral approach have been more successful in promoting changes in alcohol consumption. These treatments include targeting cognitive processes and emotions that may precipitate,

maintain, or change behavior, as well as utilizing behavioral methods (e.g., repeated practice, reinforcement) for promoting behavior change (Kadzin, 1988).

Other treatments that have shown promise focus on the social, environmental, and interpersonal relationships that influence recovery or maintain drinking decisions. Spousal and family support have been shown to be important predictors in successful recovery (Bowers & Al-Rheda, 1990; Sobell, Sobell, Toneatto, & Leo, 1993), and marital, family-based, and community reinforcement approaches have all shown positive results regarding drinking outcomes (Finney & Monahan, 1996; Holder, Longabaugh, Miller, & Rubonis, 1991; Miller, Brown, et al., 1995).

Psychopharmacological treatments target the biological contribution to alcohol dependence by attempting to block or alter pathways in the brain that respond to the pleasurable effects of alcohol. The three major psychotropic agents used currently are Disulfiram, Naltrexone, and the more recently approved Acamprosate. Disulfiram (Antabuse) works by preventing alcohol from being broken down into the bloodstream, which induces physical illness in the drinker when consuming the substance. Naltrexone blocks the opiate receptors in the brain, thus making the effects of alcohol less pleasurable and rewarding. Acamprosate is structurally similar to the GABA neurotransmitter, and is thought to reduce craving for alcohol use by stabilizing the balance of neurotransmitters that are destabilized in alcohol dependency. Evidence is mixed with regard to the psychotropic options, and most often compliance is an issue. There are also possible confounding results due to combining psychotropic medication with psychotherapy in clinical trials, which makes it difficult to tease out the effects of the medication alone (O'Malley, Jaffe, Chang, & Schottenfield, 1992; Volpicelli,

Alterman, Hayasguda, & O'Brien, 1997). Of the options available presently, Acamprosate has shown the most promise in reducing alcohol consumption, with greater compliance rates and increased abstinence in clinical trials (Paille et al., 1995; Poldrugo, 1997; Sass, Soyka, Mann, & Zieglansberger, 1996).

Although twelve-step programs are widely established, there is some question about their effectiveness when compared to other treatment modalities. This finding generally applies to Alcoholics Anonymous (AA) only, which has limited outcome research. Some have suggested that because AA studies have relied on clients with higher levels of resistance such as DUI offenders, they may not reflect the true efficacy or effectiveness of the treatment (McCrary & Delaney, 1995). Other twelve-step approaches that incorporate attendance to AA in conjunction with the twelve steps have fared better (Humphreys, Huebsch, Finney, & Moos, 1999; Morgenstern, Labouvie, McCrary, Kahler, & Frey, 1997) and result in greater abstinence rates. These types of interventions have been termed Twelve Step Facilitation (TSF) interventions, based on the behavioral, spiritual, and cognitive principles of AA. Treatment focuses on acceptance of the need for abstinence from alcohol use and the willingness to participate actively in the twelve-steps as a means of sustaining sobriety. TSF interventions incorporate assessment of the client's alcohol or drug use, obtaining a commitment from the client to remaining abstinent, understanding and implementing twelve-step concepts, and involvement and ongoing participation in AA.

Project MATCH found that TSF was equivalent to cognitive behavior therapy and motivational enhancement therapy in reducing alcohol consumption, as well as demonstrating better outcomes among participants without comorbid psychopathology

(PMRG, 1997). In an additional study conducted by Moos, Finney, Ouimette, and Suchinsky (1999), findings indicated that when compared with participants in the cognitive behavior therapy group, those in the twelve-stepped facilitation group reported higher rates of continuous abstinence.

Derived from the growing need for brief, cost effective treatments that could facilitate motivation to change problematic drinking behavior, motivational interventions, or studies that have incorporated motivational principles (termed motivational enhancement [MET] or adaptations of motivational interviewing [AMI]) arguably have the strongest support for being the most efficacious brief interventions. These types of motivational interventions are originally derived from motivational interviewing (MI), although divergent from MI in the original form. Usually they are presented as a precursor to other treatment, or as an add-on component to treatments that incorporate various types of drinking behavior feedback (e.g., information about drinking norms, blood alcohol content, high risk situations and behaviors associated with consumption patterns) or additional non-motivational interviewing techniques, while retaining motivational interviewing principles (Miller & Rollnick, 2002).

### *Motivational Interviewing and Treatments using Motivational Principles*

Motivation has always been considered a critical component in the treatment of alcohol-use disorders. Historically, it was believed that the motivation to change problematic drinking behavior was what contributed to successful treatment, and the lack of motivation resulted in poor outcome and treatment dropout (Miller, 1985; Miller & Rollnick, 1991.) Traditional treatments for substance use focused on motivation as a trait,

and, therefore, low motivation represented a formidable barrier to behavior change.

Viewing motivation as an all or nothing concept, individuals believed to be unmotivated for treatment required stringent efforts to combat defenses of denial, rationalization, and repression. However, there were many factors that led to the idea that motivation was not solely a static, dichotomous trait. As noted previously, many studies have demonstrated that confrontation and non-acceptance foster resistance to change, and that acceptance, empathy, and genuineness promote change (Miller, Benefield, & Tonigan, 1993; Patterson & Forgatch, 1985; Rogers, 1957). In addition, the emergence of social learning theory emphasized that an individual's interactions with the external and social environment could influence his or her motivation for changing drinking behavior (Bandura, 1977; Abrams & Niaura, 1987; Maisto, Carey, & Bradizza, 1999).

Furthermore, the transtheoretical model of behavior change demonstrated that increased awareness of change occurs as a series of steps, where individuals move along a continuum, cycling back and forth through different levels of motivation before eventually moving closer to change and desired goals (Proshaska & DiClemente, 1984).

The transtheoretical model (TTM) of behavior change has played an important role in the development of motivational interviewing and interventions that utilize a motivational approach in treatment (DiClemente, 1999; Miller & Rollnick, 1991).

Beginning in the 1970's, the TTM has been applied to a wide array of health behaviors and has been one of the dominant models to explain how individuals make behavioral changes. A theory of behavior change whereby individuals are believed to progress through a series of stages when attempting to change behavior, the TTM is also characterized by individuals' different attitudes, thoughts, beliefs, and values about the

change process; therefore, change is viewed as a multidimensional process that includes not only stage progression, but the processes of change, decisional balance, and self-efficacy when identifying and moving toward making behavioral changes (Prochaska & DiClemente, 1984). When considering and actually making changes in behavior, individuals are believed to progress through the stages of change in a temporal fashion through initial precontemplation (unaware of a problem and not considering making changes), to contemplation (recognition that a problem exists and the consideration of making changes), to preparation (planning and commitment to making changes), to action (making changes), and maintenance (sustained changes over time). Moving forward through these stages is believed to occur in an step-wise fashion, although movement back and forth between stages is common, and typically involves between three and seven cycles of movement before long-term maintenance of the desired change is achieved (Prochaska, DiClemente, & Norcross, 1992). The movement toward maintenance is occasionally interrupted by spiraling back to previous stages, which is subsequently followed by forward progress. Relapse is not viewed as a failure, but rather a predictable pattern in the change process. In this way relapse is viewed as a learning opportunity to aid in future attempts to modify and change behavior.

Substance use interventions that incorporate the principles of motivational interviewing are well suited for initiating and maintaining movement throughout the stages of change (Miller & Rollnick, 2002). These types of interventions are particularly well suited for mandated populations who are often resistant to more confrontational approaches to treatment and are generally in the earlier stages of change, such as precontemplation and contemplation (Harper & Hardy, 2000; O'Leary & Monti, 2004).



For individuals in the precontemplation and contemplation stages, more traditional approaches that attempt to force behavior change often result in resistance to changing the behavior. Conversely, motivational approaches serve to facilitate the individual's examination of the behavior to change by exploring the behavior and allowing individual's to examine their own unique situation that includes considering the pros and cons of changing the behavior and making the decision to change.

Motivational interviewing has been defined specifically by Miller and Rollnick (2002) as "a person-centered directive method of communication for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (pg. 25). Within this approach, MI attempts to elicit behavior change by aiding clients to explore their own goals and values and their ambivalence about changing their behavior to be consistent with their desired goals. Grounded theoretically in a humanistic, client-centered approach (Rogers, 1957), MI incorporates Rogerian principles of acceptance, genuineness, empathy, and warmth as necessary components for behavior change, while viewing non-acceptance and negative confrontation as barriers to promoting change. Rogers believed that all organisms have what he referred to as "an actualizing tendency." That is, every life form has an intrinsic motivation to develop its potential to the fullest extent possible. He believed that all individuals will pursue this goal, and if the therapist incorporates the principles outlined above and nurtures this tendency in a non-directive manner without forcing change, no additional techniques are necessary to change behavior. MI differs somewhat from the non-directive approach outlined by Carl Rogers, however, in that the non-directive approach is viewed as necessary but not sufficient in increasing motivation to change behavior. In addition to a non-directive style, MI incorporates a directive

component, specifically, the examination and resolution of ambivalence, which is focused and goal oriented. The idea is to help individuals to move past the ambivalence and toward changes in behavior.

MI has been described as a way of “being with people” and having a distinctive “spirit” or style, rather than simply a set of techniques that can be easily learned to foster behavior change (Miller, 1995; Miller & Rollnick, 1991, 2002). MI does incorporate specific techniques to induce behavior change, but the spirit in which these techniques are delivered is central to the core of the intervention. First, collaboration between the client and therapist is a central component. The relationship is viewed as a partnership rather than one where the therapist adopts the expert role. This allows for exploration and support of the benefits and consequences of behavior rather than persuasion or argument. The idea is to create an atmosphere that is not coercive but instead conducive to change. Similarly, motivation to change behavior is elicited from the client and not the therapist. In other words, the client is viewed as an autonomous agent in the decision making process, evaluating the pros and cons of changing the behavior. This differs from more traditional confrontational therapies and authoritarian approaches where the client is told what needs to or should be changed (Miller, 1995).

In order to resolve the ambivalence that is a barrier to change, MI encourages the client to articulate the reasons for change, thus moving closer toward resolving the ambivalence. This does not mean that the therapist is a passive observer throughout this process; rather, the client is allowed to explore the contradictory and confusing elements of the conflict while the therapist facilitates both sides of this dialogue and guides the client towards an acceptable resolution that will trigger change. Attempts to persuade the

client to change are not effective in the resolution of ambivalence. These tactics, instead, tend to increase client resistance and diminish the probability of change (Miller, Benefield, & Tonigan, 1993; Miller & Rollnick, 2002).

The readiness to change behavior is not viewed as a trait, but instead as a reciprocal and fluctuating interaction between the therapist and the client. In other words, if resistance and denial emerge from the client, they are not viewed as traits of the client but instead as a signal to the therapist about the therapists' own behavior. At that point resistance usually means that the therapist is assuming that the client is ready to change, or pushing for more change than the client can manage. Therefore, this behavior from the client is a cue to the therapist to modify motivational strategies.

Finally, the therapist takes a directive approach when helping the client examine and resolve ambivalence. The overall goal is to elicit, clarify, and help the client resolve ambivalence about the behavior in question. In this way, the therapist has an agenda, to help free the client of ambivalence that is responsible for maintaining repetitive, self-destructive, and self-defeating behaviors.

In conjunction with the style embodied in the principles outlined above, the therapist utilizes specific strategies or techniques that are incorporated in a motivational intervention. These have been defined as: expressing empathy, developing discrepancy, avoiding argumentation, rolling with resistance, and supporting self-efficacy (Miller & Rollnick, 1991, 2002).

Expressing empathy toward clients is considered paramount in the therapeutic relationship and in the motivation and treatment of individuals with alcohol use disorders in particular (Miller, 1985; Miller & Rollnick, 1991). Empathy can be expressed as

warmth, respect, caring, understanding, and active interest in an individual. In MI, empathy creates an atmosphere of acceptance where the client feels comfortable to explore conflict freely and safely (Miller & Rollnick, 1993). This is accomplished through respectfully listening while focusing on understanding the perspective of the client.

Developing discrepancy involves creating an awareness of the consequences of the problem behavior. Discrepancy is viewed as an inconsistency between a client's present behavior and future personal goals. Motivation for change is created when the individual perceives a discrepancy and voices his or her or his concern about the behavior. In this way the client, rather than the therapist, presents the reasons for change. Behavior change is more likely to occur when the individual recognizes the need for change. Therefore, the therapist encourages the client to provide the arguments for change. MI strategies are designed to help the client elicit and reinforce change statements. Recognition of the problem, intention, and optimism toward change all serve as reinforcers that increase the likelihood of change.

Avoiding argumentation is an important component of MI. Arguing with a client is viewed as confrontation that increases defensiveness and decreases communication. Resistance is heavily influenced by therapist behavior, and resistance during treatment is predictive of failure to change (Bien, Miller, & Tonigan, 1993; Miller & Rollnick, 1991). Additionally, the use of diagnostic labels has been indicated as fostering argumentation (Miller & Rollnick, 1991). In MI, diagnostic labels are considered unnecessary and often an impediment to change.

Rolling with resistance is another component to MI. It requires that the therapist acknowledge reluctance and resistance while also accepting that the behavior change will come from the client. This serves to decrease client defensiveness as well as promote respect for the client. In addition, it also helps the therapist to maintain a sense of personal efficacy.

Finally, supporting self-efficacy is a crucial element in changing behavior. This refers to the individual's belief or ability to succeed with a specific task. How confident an individual is about changing behavior has been found to be predictive of outcome in the treatment of addictive behaviors (DiClemente, Proshaska, & Gilbertini, 1985; Godding & Glasgow, 1985; Solomon & Annis, 1990). In Motivational Interviewing, the therapist can support self-efficacy by enhancing confidence in the client's capability to cope with obstacles that are barriers to change. In a sense, the therapist aids the client in fostering hope that change is possible. The therapist can achieve this by believing in the client's capacity and capability for change, while simultaneously encouraging the client in assuming the responsibility for change.

There is evidence for the efficacy of MI-influenced therapies as brief interventions. Most often MI style therapies fare equally well, but not necessarily better than alternative treatments in the reduction of alcohol consumption; however, the advantage of the MI approach is its brevity. In other words, MI influenced interventions tend to require fewer sessions to achieve similar results, making them a more parsimonious alternative to other effective treatments. For example, in one study of alcohol abusers in a community sample that compared a 90-minute brief intervention consistent with a motivational interviewing style with six 45-minute sessions of CBT,

results indicated that both interventions resulted in decreases in alcohol consumption, but there were no significant differences between the two interventions. In addition, there was no difference between the two groups on measures of client satisfaction. The one significant difference found was that the brief intervention group was more cost effective than the group that received CBT (Shakeshaft, Bowman, Burrows, Doran, & Sanson-Fisher, 2002). Similarly, in project MATCH, the largest study conducted that attempted to match clients to treatment, it was determined that while all the interventions resulted in similar decreases in alcohol consumption, participants in the motivational enhancement group (MET) achieved those gains with only four sessions as opposed 12 sessions in both the cognitive behavior therapy (CBT) and twelve-step facilitation (TSF) groups (PMRG, 1997).

Furthermore, many studies have found that, when compared to alternative interventions or no-treatment controls, research incorporating 1-4 sessions of motivational enhancement strategies or adaptations of MI has demonstrated success in reducing alcohol-related problems. These results have been found among diverse drinking samples such as binge drinkers (Borsari and Carey, 2000), high-risk college student drinkers (Marlatt et al., 1998), community samples receiving feedback on alcohol consumption (Miller, Sovereign, & Kreege, 1988), emergency room patients hospitalized for alcohol-related accidents (Monti et al., 1999), and hospitalized and outpatient adult and adolescents identified as problem drinkers (Heather, Rollnick, Bell, & Richmond, 1996; Knight, Sherritt, Harris, Gates, & Chang, 2005).

Further support for motivational interventions has come from meta-analytic studies and reviews, although some recent findings have also revealed some limitations

of an MI facilitated approach. In one of the first meta-analytic reviews that evaluated the literature to determine what treatments were most effective for alcohol-use disorders, it was found that brief therapies and motivational enhancement therapies were superior to skills training, CBT, family therapy, psychotropic medication, confrontation therapy, and video confrontation therapies (Miller et al., 1995).

One study that evaluated 11 clinical trials that included alcohol and drug abusers determined that nine of the studies supported the efficacy of adaptations of motivational interviewing (AMI) for the treatment of substance-use problems (Noonan & Moyers, 1997). An additional study that reviewed 29 randomized trials of brief interventions that incorporated the principles of MI in the treatment of substance abuse, smoking, diet, exercise, and HIV risk reduction found strong efficacy for the motivational intervention with alcohol and drug abusers (Dunn, DeRoo, & Rivara, 2001). Ten out of the fifteen reviewed substance abuse studies showed significant effect sizes for the differences between MI approaches and other treatments, ranging from .30 - .95 (Aubrey, 1998; Marlatt et al., 1998). In addition, motivational interventions tended to result in increased entry into and retention in treatment. Across all studies, the effects of MI-influenced approaches did not diminish, although only some, but not all, of the individuals who abused alcohol and other drugs maintained follow-up gains.

In a qualitative review of 26 studies utilizing AMI for a variety of problems, including alcohol and drug abuse, Burke, Arkowitz, and Dunn (2002) found support for the efficacy of AMI. In particular, AMI was superior to no-treatment control groups and equivalent to comparison treatments. In a more recent and comprehensive meta-analytic review of 30 clinical trials of AMIs, it was found that among the studies focusing solely

on alcohol use, AMI treatments were significantly more effective than no treatment or placebo controls in reducing alcohol use. Compared with alternative treatments, however, no significant differences emerged; nevertheless, AMIs achieved the same results in 2 as opposed to 5-6 sessions of the alternative treatments (Burke, Arkowitz, & Menchola, 2003). In addition, while this study found only small to medium effect sizes, ranging from .25 to .53, for AMIs when compared to other treatments, the sustained effects over time were promising, with effect sizes at 20 weeks post-treatment approximately equal to effect sizes three and a half months later. Even with these smaller effect sizes between groups, within group effect sizes were .82, with clients reducing their alcohol intake by 56% from 32 to 16 standard drinks per week.

Alternatively, a meta-analytic study that evaluated studies comparing cognitive behavioral skills training (CBST) and adaptations of motivational interviewing (AMIs) found that both interventions were superior to a no-treatment control condition. When compared to each other, however, results were equivalent, with both interventions resulting in decreased drinking at follow-up (Burke, Dunn, Atkins, & Phelps, 2004). The authors noted however, that sessions of AMIs (2 sessions) were shorter in duration than CBST interventions (12 sessions), thus highlighting the cost-effectiveness of the AMI models.

Overall, while it is apparent that motivational interventions are not a panacea in the treatment of substance-use disorder problems, there is evidence that these principles can be applied to diverse populations and satisfy the requirements for a brief, cost-effective, and efficacious treatment. In addition, there is a burgeoning literature indicating that the principles of MI can be applied successfully as a precursor to alternative



treatments to enhance motivation and compliance, and as stand alone treatment that often includes some type of feedback component about drinking behavior, such as information about drinking norms, blood alcohol content, and high-risk situations and behaviors associated with higher levels of consumption patterns. Additionally, because delivering information about drinking behavior in a motivational style increases receptivity to information rather than increasing the minimization, repression, and denial found among more traditional confrontational approaches, the present study seeks to incorporate the use of motivational principles while offering additional feedback about alcohol use through the use of video to allow self-examination of drinking patterns and behavior.

#### *Self-Monitoring and Targeting Misperceptions; Relationship to Alcohol Use*

Interventions for alcohol use-disorders often incorporate a self-monitoring component as part of the treatment in order to raise individuals' consciousness about their own drinking patterns and potential problems associated with alcohol use. In general, self-monitoring refers to having individuals monitor their own drinking patterns over a specified time-period. This information may be utilized by the treatment provider to provide personalized feedback to the individual about the individual's own alcohol use when compared with information about general drinking norms, risk factors (e.g., family history of alcohol use/dependence), and high-risk situations and behaviors (e.g., driving ) associated with higher levels of consumption patterns.

Within the addiction literature, researchers have been concerned with both the accuracy of self-monitoring techniques, as well as how self-monitoring affects outcomes for individuals seeking treatment for alcohol use (e.g., reductions in alcohol

consumption). Self-monitoring has been used to provide individuals and treatment providers with an accurate assessment of alcohol use, including information about the quantity and frequency of alcohol consumption, mood, and problem behaviors associated with drinking. Overall, it has been demonstrated that self-monitoring in the research and treatment of alcohol-use disorders is widely advocated and has an advantage over retrospective recall in terms of increased reliability and validity (Marlatt & Gordon, 1985; National Institute of Alcoholism and Alcohol Abuse, 1998; Sobell & Sobell, 1978).

The term reactivity has been used to describe the changes that occur as a function of self-monitoring, referring specifically to a decrease in unwanted behaviors and an increase in behaviors that are desired simply as a result of observing or recording the behaviors (Korotitsch & Nelson-Gray, 1999). Research has demonstrated that behavioral changes occur as a consequence of self-monitoring (see Korotitsch & Nelson-Gray, 1999 for a review), and many interventions for alcohol-use disorders incorporate self-monitoring of alcohol use as a component of the total treatment package (see Larimer & Cronce, 2002).

In general, research with college student populations has consistently demonstrated that interventions that most often include a self-monitoring component as part of the treatment (e.g., cognitive based skills interventions and brief motivational interventions) evidence significant decreases in alcohol consumption and alcohol-related problem behaviors by the end of treatment (Larimer & Cronce, 2002). Isolating the effects of self-monitoring on decreased alcohol consumption and associated problems has been difficult, however, particularly because many studies do not include self-monitoring as a stand-alone intervention. However, the studies that have evaluated self-

monitoring or self-assessment of alcohol use as an intervention have demonstrated significant decreases in alcohol consumption, alcohol-related problem behaviors, or both by the end of treatment (Carey, Carey, Maisto, & Henson, 2006; Cronin, 1996; Garvin, Alcorn, & Faulkner, 1990).

Another method of providing information to individuals in order to raise consciousness about their own drinking behavior is through the social norming approach; this refers to giving people factual information about others' usage and then comparing it with their own usage. Often this information has been termed "feedback" and is presented to the client as verbal and written information about national norms or peer use via marketing campaigns and advertising through media like television, magazines, and billboards. College campuses often use social norm information as an attempt to challenge misperceptions about alcohol and other substance use. Reasoning for this comes from a large literature illustrating that misperceptions about the norms for peer drinking fosters increased drinking behavior, and that challenging and changing these misperceptions results in decreased drinking (Berkowitz, 2005; Perkins, 2002, 2003).

Most often, college students tend to overestimate others' consumption when compared with their own and believe that others have more permissive attitudes about substance use than they do (Perkins, Meilman, Leichliter, Cashin, & Presley, 1999). Therefore, interventions aimed at targeting misperceptions by providing normative data about peer substance use in comparison with one's own use have been useful in increasing awareness of individual consumption, as well as in decreasing drinking and alcohol-related problem behaviors (Fabiano, 2003; Jeffrey, Negro, Miller, & Frisone, 2003; Neighbors, Larimer & Lewis, 2004; Perkins & Craig, 2002).

In a recent study that analyzed an aggregate data base of the National College Health Assessment Survey administered to 76,145 students at 130 different universities, it was found that regardless of the actual campus drinking norm, a large percentage of students overestimated peer alcohol use (Perkins, Haines, & Rice, 2005). In addition, the strongest predictor of alcohol consumption was student perception of the campus drinking norm, with personal consumption higher relative to student overestimation of the campus norm. Additionally, misperception of the norm was a stronger predictor of alcohol consumption than the actual campus norm. Furthermore, increased drinking and negative consequences associated with drinking were significantly greater for those students in colleges that did not offer information about misperceived norms.

Most importantly, Perkins, Haines, and Rice (2005) determined from their research that in over 90% of schools, providing information about misperceived norms through prevention efforts did *not* result in reduced misperceptions. In fact, they noted that in 34% of the schools, exposure to prevention information was associated with greater misperceptions. Thus, the prevention information provided by over one third of schools was actually associated with students' increased risk of alcohol-related problems. From the data collected, these researchers were unable to determine the specific content of the alcohol education information to which the students were exposed. Therefore, it was not possible to state with certainty what kind of information was associated with either decreases or increases in misperceptions of the campus drinking norms.

What this suggests is that, overall, previous research has demonstrated that targeting misperceptions about drinking does result in decreased alcohol use and associated negative consequences. However, it appears that providing information about

misperceptions of drinking norms can result in decreased alcohol use and associated negative consequences *only* when it results in actual changes in misperceptions. In addition, solely providing factual information about drinking norms may not necessarily result in actually changing misperceptions, and more research is needed to determine what specific variables contribute to actually changing perceptions (Perkins, Haines, & Rice, 2005).

When considering treatment for alcohol use disorders, research has demonstrated the importance of increasing individuals' consciousness about problematic drinking levels and negative consequences associated with drinking. Self-monitoring alcohol use has been utilized both a way to raise awareness about drinking patterns and behavior and as an intervention tool to decrease alcohol use and associated alcohol-related problem behaviors. In addition, targeting misperceptions about alcohol use and actually changing misperceptions results in decreases in alcohol consumption and alcohol-related problems.

It may be inferred from the previous research that, in general, misperceptions about alcohol use predict drinking decisions, and that increasing awareness about misperceptions and actually changing misperceptions leads to decreases in drinking for individuals who consume alcohol at problematic levels. Building on this assertion from prior research, it was posited that if individuals hold misperceptions about themselves and their drinking behavior, these misperceptions would be highlighted by viewing a previously recorded image of oneself after a drinking event and discussing the experience during a brief one-session motivationally-enhanced interview. It was believed that this would lead to individuals' increased awareness and insight into thoughts and behaviors about their own alcohol use that may be unknown to them or that differ from their prior

thoughts and what they believed about their own behavior. Because the present study is interested in increasing awareness of one's own alcohol use and how individuals' view themselves in relationship to their own drinking behavior, research on self-perception will be reviewed in more depth.

### *Self Perception: Relationship to Drinking Behavior*

How individuals acquire self-knowledge has been extensively theorized and studied by researchers. While numerous models exist as an attempt to explain how individuals come to know themselves, there is no overarching or integrative framework in the area of self-perception. Individuals are believed to gain knowledge and learn about themselves by observing their own behavior (Bem, 1972), by observing others' behavior (Bandura, 1971), through introspection and uncovering of unconscious processes (Freud, 1915), creating narratives of the self (McAdams, 1993), by observing how other people view us (Cooley, 1902; Mead, 1934), and by comparing ourselves with others (Festinger, Torrey, & Willerman, 1954). In addition to the complexity involved in how we gain information about the self, researchers have inferred that much of our knowledge is severely compromised due to motivational drives to keep information out of conscious awareness that is uncomfortable or anxiety provoking. This is usually achieved through unconscious motivational defenses like repression, or intentional forgetting through suppression (see Wilson & Dunn, 2004 for a review). In addition to the limitations of self-knowledge through unconscious processes, researchers have also been interested in what has been referred to as nonconscious processing, referring to a collection of processing modules in the mind that are considered to operate outside of conscious

awareness (Nisbett & Wilson, 1977; Wilson, 2002). This has been used to explain how individuals can lack knowledge about the self, as well as to explain how individuals may construct part of themselves through a narrative approach; taking what is already known about the self via a conscious state, and filling in the gaps about unknown knowledge (nonconscious) by constructing a narrative about the self (McAdams, 1993).

In addition to how we formulate our self-perception, the accuracy of self-perception has also been an important and widely studied area of research. Although it is generally recognized that only individuals have access to their own mental states, there is a large body of literature that has debated whether individuals are able to provide accurate assessments of themselves, and several studies have noted inaccuracies in self-perception (see Vazire & Mehl, 2008 for a review). While individuals may have a unique perspective into their own internal states, it is also recognized that observers have a different perspective into behavior that differs from the individual's view, and that the individual is not the sole source of knowledge about his or her own behavior. It has been theorized that limitations in self-perception may be due, in part, to how the self and other perceive the world from a different visual perspective, and that this difference in perspective results in a truncated view of our own behaviors. Thus, we tend to perceive ourselves more through introspection and generally perceive others through observable behavior (Jones & Nisbett, 1972; Pronin, 2008).

Many studies have focused on how perceptions of the self differ from others' perceptions and have demonstrated that people's perceptions of themselves differ from how others perceive them (see Shrauger & Schoeneman, 1979 for a review). From studies on self and other perception, it cannot be assumed that others' perceptions are

more accurate than self-perceptions, or that others have a better understanding about individuals than the individuals themselves. However, it can be inferred that others may have access to information that is not accessible to the self.

Some recent research in the area of the accuracy of self-ratings and other ratings of daily behaviors has demonstrated that while individuals self-report that they are the best judge of themselves and that they know themselves better than others know them, when empirically examined, it appears that others are just as accurate as the self in predicting engagement in daily behaviors (Vazire & Mehl, 2008). In this research, the authors had participants wear recording devices over a four-day period to measure their daily behaviors in real time. When compared with informant reports from three individuals who knew them well, results revealed that these informants were as accurate as individuals themselves in predicting their daily behavior. In addition, both self and others exhibited unique predictive contributions of behaviors, with others being more accurate in predicting some behaviors that were self-reported by individuals, and individuals more accurate in predicting some of their own behaviors than others were. When compared with the real-time assessment of behaviors, other ratings were significantly more accurate than self reported ratings for talking one on one and attending a lecture, with a significant trend toward spending time with others. In contrast, self-ratings were more accurate than others for arguing, and there was a slight trend although not significant for watching television.

Overall, these findings suggest that others may be able to predict some aspects of individuals' behavior just as well as the individuals can themselves, even though individuals believe that they know themselves better than others do. It also suggests that



both individuals and others have unique perspectives into behavior, and that in some cases, others might know information about the individual that is unknown to the self. Thus, although individuals believe they know themselves well, there are some instances when information about the self may be out of their own awareness.

Additional research on self-accuracy has demonstrated that self and other agreement may be dependent on the type of trait or behavior being measured, and that agreement may be minimized when traits are viewed as desirable. In a study conducted by Gosling, John, Craik, and Robins (1998), the researchers tested whether individuals differed from others when coding observable acts. Individuals were videotaped and behavioral acts were coded by others who watched the videotape. Individuals did not watch the tape but instead relied on retrospective recall to code the acts in which they engaged. When compared with the self-observer rating condition, agreement was higher for the observer-observer condition, indicating that two observers were more likely to agree on individuals' act frequency than were the self and the observer. In addition, when individuals watched the videotape of themselves just as the observers had done, self-reports of their own behaviors still did not exhibit greater agreement with observer judgments than when compared with individuals retrospective reports. While the researchers did find that higher ratings of observer-observer agreement elicited higher levels of self-observer agreement on traits, the accuracy of self-reports varied considerably and was dependent upon the observed behavior and desirability of the behavior, with individuals positively distorting and self-enhancing their own traits and minimizing their negative ones.

These findings suggest that individuals may be able to examine their own behavior when self-reporting behaviors and traits, although this may be attenuated by a motivation toward a self-enhancement bias by underreporting undesirable acts and overreporting desirable ones. This is in agreement with a large body of similar literature that has demonstrated that individuals believe they possess higher levels of positive traits than others (Alicke, 1985; Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Brown, 1986). In addition, when comparing themselves to others on negative traits, individuals believe they do not possess these negative characteristics, or they tend to believe that others possess more negative traits than they do.

When asked to compare themselves to others on positive and negative traits, individuals generally rate themselves more favorably and less negatively than when rating others (e.g., Alicke, 1985). This has occurred when individuals rate themselves against unknown hypothetical college students (see Taylor & Brown, 1988 for a review), known peers (Kruger, 1999), former spouses (Schuldberg & Guisinger, 1991), friends (Brown, 1986), and compared with hypothetical problem drinkers (Rothman, Schuldberg, & Cochran, 2004).

In addition, individuals tend to overestimate their own positive qualities relative to the assessment of others' qualities. In a study that examined how individuals rate themselves on job performance when compared to other similarly employed men, French (1968) found that only 2 out of 92 men rated their own performance below the 50<sup>th</sup> percentile (cited in Rosenberg, 1979). Similarly, another study found that when comparing themselves to "most other people" on personality characteristics and general abilities, the majority of individuals rank themselves as higher than others (Pelham &

Swann, 1989). Because it has been noted that most people cannot be above average, (Colvin, Block, & Funder, 1995) it has been concluded that individuals tend to exaggerate their positive characteristics (Buunk & Van Yperveen, 1991; Larwood & Whitaker, 1977; Pelham & Swann, 1989).

It appears that when others' traits are viewed as undesirable and incongruent with individuals' perception of themselves, individuals are likely to view others as less desirable and more dissimilar to themselves. This has also been found in research paradigms where individuals feel that their self-image has been threatened. Some research has demonstrated that individuals who received lower scores on intelligence tests were more likely to evaluate stereotyped targets more negatively than individuals who received higher scores. Among individuals who stereotyped negatively it was found that the act of stereotyping increased their self-esteem relative to those who did not engage in negative stereotyping (Fein & Spencer, 1997; Spencer, Fein, Wolfe, Fong, & Dunn, 1998). The authors theorized that stereotyping is both a salient and effective way for individuals to restore and maintain a positive self-image.

More evidence for enhancement of positive qualities relative to the assessment of others' qualities comes from attribution research examining actor-observer asymmetries. Although widely supported and well established evidence in the social psychology literature exists that individuals (also referred to as actors) attribute the actions of others (also referred to as observers) to stable trait dispositions and view their own behavior as more influenced by external situational forces (Jones & Nisbett, 1971; Watson, 1982), this has fallen under scrutiny in a recent meta-analytic study (see Malle, 2006).

Although Malle (2006) found that effect sizes were very small to non-existent for observer attributions to be viewed as trait like or internal relative to individuals' self attributions, these effects were moderated by failures and socially undesirable behaviors. More specifically, the research demonstrated that individuals were less likely to attribute relapses in drinking, aggressive impulses, failures on tests, and problems in school to internal causes when compared with observers' views of the individual. However, attributions differed depending upon the valence of the event. For events that were viewed negatively, individuals were more likely to attribute these to external causes rather than to internal, dispositional ones. Conversely, events viewed as positive were more likely to be attributed to individuals' internal attributions, rather than to external causes.

Further support for this comes from a meta-analytic study on universal positivity bias. Mezulis, Abramson, Hyde, and Hankin (2004) reviewed 266 studies and found evidence of a robust effect size ( $d = 0.96$ ) for a self-serving attribution bias for positive events, indicating that individuals make more internal, stable, and global attributions for positive or successful events than for events considered negative (e.g., failures).

A summary of the previous findings suggests that although individuals have access to their internal states and thus may know themselves better than others in some instances, there is also evidence that they are not privy to all the information about themselves, and that others hold a different perspective that offers additional information. In addition, it appears that individuals' information about the self may be attenuated by the tendency to self-enhance positive attributes and minimize negative ones when comparing oneself to others.

This information is particularly important when considering treatment for individuals with alcohol-use disorders. While it has already been demonstrated that individuals hold misperceptions about their own drinking relative to others' drinking and relative to actual norms, studies have also repeatedly found that individuals hold different beliefs for the self and others when considering alcohol's positive and negative effects. Many studies have investigated individuals' expectations about the future effects of alcohol on oneself and others, and findings have indicated that while both positive and negative effects of alcohol are attributed to both the self and others, more positive effects of alcohol are attributed to the self and more negative effects are attributed to others (e.g., Roizen, 1983).

In one study that asked college students and individuals from the general population to describe the effects of alcohol on the self and on others, results indicated that participants expected others to experience more negative effects when drinking, especially for socially undesirable behaviors (e.g., aggression, argumentativeness, meanness, fighting, vulgarity, and losing self-control). In addition, heavier drinkers reported that they would experience more pleasurable effects from alcohol use than others would (Leigh, 1987). Similarly, Rohsenow (1983) found that college students who were heavy drinkers expected greater pleasurable effects than light drinkers did, yet both groups reported more effects that are negative for others.

Expectancies about the positive effects of alcohol have repeatedly been found to predict drinking behavior (Christiansen & Goldman, 1983; Stacy, Newcomb, & Bentler, 1991). Individuals who hold more positive expectations of alcohol's pleasurable effects tend to consume more alcohol than individuals who endorse fewer expectancies. These

findings are predictive of higher alcohol consumption for individuals who hold higher expectancies even when the drinking event does not match the individual's expectations and whether or not individuals actually experience any positive effects from alcohol.

While some research has demonstrated that changes in positive expectancies result in decreased alcohol consumption and alcohol-related problem behaviors (see Laubarraco & Dunn, 2008 for a review), findings have been inconsistent, with other studies demonstrating that changing positive expectancies has no effect on drinking behavior (see Jones, Corbin, & Fromme, 2001 for a review). While it has been repeatedly demonstrated that expectancies predict drinking decisions, the research is still far from conclusive about whether altering positive expectancies reliably results in decreases in drinking and alcohol-related problem behaviors. Nevertheless, continued expectancy treatment research is considered important given the positive outcomes in many studies, and the National Institute on Alcohol Abuse and Alcoholism (NIAAA) has supported continued research on interventions that challenge expectancies (National Institute on Alcohol Abuse and Alcoholism, 2002). Therefore, the current research study included a measure of alcohol expectancies in order to examine whether or not individuals' expectancies of alcohol's pleasurable effects would decrease following the treatment intervention.

As noted previously, many brief interventions for alcohol use stress the importance of increasing awareness about alcohol use by targeting and challenging misperceptions about drinking norms in order to reduce problematic consumption and consequences associated with use. Additional research has also demonstrated how the expectations about the effects of alcohol on oneself and others contribute to drinking

decisions, and some studies demonstrate the importance of working to change expectancies in order to foster changes in consumption patterns. Overall, some studies have found that challenging and altering misperceptions about alcohol use decreases consumption and reduces problematic behaviors associated with use (Fabiano, 2003; Jeffrey, Negro, Miller, & Frisone, 2003; Neighbors, Larimer & Lewis, 2004; Perkins & Craig, 2002) Other studies have found that perceptions remain stable, even when using national norms, peer norms, and challenging expectations about the effects of alcohol (Jones, 2004; Jones, Corbin, & Fromme, 2001; Perkins, Haines, & Rice, 2005).

A large amount of the research in the addictive behaviors field has supported treatment methods that attempt to alter misperceptions as well as to increase individuals' awareness about alcohol use and alcohol-related problem behaviors. Findings from studies generally demonstrate that increasing awareness and altering misperceptions leads to changes in drinking behavior and associated negative consequences. Therefore, the present study was designed to heighten self-awareness about drinking behavior through another medium: utilizing video to provide individuals with the experience of self-observation of their own drinking behavior and thoughts about their usage. It was believed that videotaping oneself after a drinking event and later viewing the videotape would provide individuals with a unique perspective into their own thoughts and behaviors about alcohol use. Given the previous literature review on misperceptions about alcohol use, it is reasonable to imagine that individuals who are adjudicated to treatment may hold misperceptions about their own drinking behavior, and that highlighting these misperceptions in the context of a brief motivational interview may lead to changes in drinking and alcohol-related consequences associated with drinking.

A review of the psychological literature has demonstrated that a variety of interventions utilizing videotape as a method of self-observation of behavior have been useful in changing misperceptions as well as promoting insight into changing a variety of problematic behaviors.

### *Video as a Self-Monitoring Tool*

During the 1960s, there was excitement over the advent of videotaping as a new method of treatment, with clinicians and researchers believing it to be a potential panacea for treating individuals who were presenting with a wide array of clinical disorders. Often referred to in the psychological literature as “video playback,” “video feedback,” or “video confrontation,” the terms have been used interchangeably to illustrate the general concept that via a self-viewing experience, individuals would be provided with an objective view of their own behavior and would be able to gain clarity about what was unknown about them, yet apparent to others (Berger, 1970). Although there appears to be no overall consensus regarding a discrete and uniform operational definition to describe the various interventions that incorporate the use of videotaping, some researchers have made a distinction between the terms “playback” and “feedback.” Video playback has sometimes been referred to as viewing oneself after videotaping and exploring what was viewed from the perspective of the individual rather than from another’s perspective (e.g., the researcher or clinician). In contrast, some researchers have described video feedback as offering verbal feedback to the individual about their behavior from the observer’s perspective. This information was often relayed to the individual by the



researcher or clinician, or possibly through other group members if feedback was offered during a group intervention.

Similarly, the terms “video confrontation” and “self confrontation” were used inconsistently throughout the 1960s and 70s in some of the psychological literature when describing studies that have incorporated the use of videotape in treatment interventions (see Gur & Sackeim, 1978). Within the addictive behaviors literature, the terms “confrontation” and “self confrontation” were most often used to describe situations where individuals viewed their own behavior on videotape. Under the rubric of “confrontation,” studies conducted throughout this period paired video viewing with additional treatment components such as behavioral modification techniques including, but not limited to, aversion training for overconsumption, discrimination training for blood alcohol concentration, avoidance practice, alcohol education, behavioral counseling and providing education and information (see Vogler, Compton, & Weissback, 1975), discussion in groups and/or individual discussion with a therapist or researcher (Paredes & Cornelison, 1968; Faia & Shean, 1976), self-exposure to the video viewing without additional experimental manipulation (Schaeffer, Sobell, & Sobell, 1972), and aversion desensitization training using derogation approaches as a way to “elicit defensive reactions” and “confronting” subjects with their “self-defeating behaviors” (Lanyon, Primo, Terrell, & Wener, 1972, p. 395).

The efficacy of many of these studies was questionable due to the lack of rigorous and controlled experimental manipulations, small sample sizes, and few objective outcome assessments. Indeed, some interventions relied on anecdotal accounts from

researchers or the subjects themselves to support or refute findings (see Bailey & Sowder, 1970).

Despite these limitations, video has been utilized in many areas of research, as well as in a variety of clinical applications. More specifically, although far from an exhaustive review of the literature, video has been utilized in the treatment of anxiety related disorders (Rapee & Hayman, 1996), schizophrenia (Davidoff, Forester, Ghaemi, & Bodkin, 1998), eating disorders (Vanger, 2001), and sexual dysfunction (Hosford, 1981). Self-observation through the use of videotape has also been incorporated into skills training (e.g., Hosford & Mills, 1983; Roter et al., 2004), group therapy (Skafta, 1987), family therapy (Reimers, 2001), and marital therapy (Alger & Hogan, 1974; Padgett, 1983). Additionally, video has been used to target aggressive behaviors among youth (O'Reilly et al., 2005), to teach communication skills to autistic children (Dauphin, Kinney, & Stromer, 2004), and for supervision in training therapists (Ivey, 1971).

In general, self-observation using video as an intervention tool has been considered effective in teaching new and more appropriate ways to gain insight into problematic behaviors and to teach and model more appropriate behaviors. However, some previous studies that incorporated the use of video for self-observation in treatment resulted in conflicting findings, particularly studies that utilized video with eating disordered clients. In one case study, a female patient with anorexia who initially denied the reality of her physical appearance later came to view her emaciated figure as unattractive, thus providing support for the intervention (Gottheil, Backup, & Cornelison, 1969). Conversely, other studies found that anorexic clients attributed more distorted qualities to their body image following video viewing than when compared with normal

viewers (Biggs, Rosen, & Summerfield, 1980; Vandereycken, Depreitere, & Probst, 1987). In the study conducted by Vandereycken, Depreitere, and Probst (1987), the researchers incorporated the use of video in group therapy for anorexia nervosa. Patients were videotaped in a bathing suit and asked to pose in different positions and walk in front of the camera, which at that time was considered a standardized procedure for videotaping body disordered clients. The tape was shown to the client and other group members, followed by discussion about reactions to the tape. Results indicated that only some individuals gained increased awareness about the discrepancy between their perception of their body and their actual body, while others acknowledged no differences between their image on tape and their self-image perception.

One study that employed the use of self-observation via video and subsequent feedback from other couples in a group setting resulted in null findings and negative effects (Alkire & Brinse, 1974). The researchers in this study used videotaped interactions of married couples and attempted to determine the effects on self-image, and in particular, to explore the effects of video playback on the self-image of the male participants involved in marital group therapy. The men were all outpatient psychiatric clients who had been hospitalized previously for various psychiatric disorders and were considered to be “functioning in the moderate to severe range of a varied assortment of neurotic symptoms” (pg. 205). All male participants were matched on age, severity of their disorder, and exposure to the same ward environment. Three groups consisting of three couples each received the video intervention; one of these groups of three couples was used to collect pilot data.

In each of the three groups, two out of the three couples were asked to identify a problem area that they thought was most representative of the remaining couple. That problem was used as the content of a role-playing situation that was recorded on video and later viewed by all three couples together in each group. Feedback on the interaction was provided to the couple who was filmed by the other two couples in the group; they were asked to discuss “what they had seen on the TV” (p. 205), while the couples receiving feedback were asked to remain silent. The therapist was present but neither intervened nor offered any feedback. Effects of the intervention were extreme. Overall, seven out of the nine relationships ended. Of the three couples in the pilot study, two of the men completed suicide, one occurring the day after the intervention, and another approximately two months later, following a deep depression. In the other two groups, one man was re-hospitalized two days following the video feedback, and he and his wife divorced shortly thereafter. Another couple filed for divorce within two weeks of the feedback, and another separated after one month. While one cannot claim a direct causal relationship between these results and the intervention, it sounded a cautionary note to researchers and clinicians.

While the studies that incorporated the use of video (see below) in treatment interventions for alcohol use disorders did not result in such drastic outcomes, effects from the interventions were less than desirable. Limited studies were conducted initially, possibly due to discouraging findings. Of the studies that focused on alcohol consumption, video confrontation was often used with inpatient, male, “alcoholics,” in an attempt to increase self-awareness of problematic alcohol use and to raise insight into problematic drinking behavior. This form of intervention was an appealing treatment

modality for the time period, particularly because it emphasized the confrontational approach by presenting clients with aspects of themselves that would normally be covered up through perceived defenses of intellectualization and denial. It was believed that confronting an individual with his or her own appearance or maladaptive behavior would lead to heightened insight and, ultimately, to changes in behavior.

In one study, patients were deliberately provided with up to ten standard drinks of alcohol in a simulated bar and were later confronted with their own “drunken comportment” through the video playback (Schaeffer, Sobell, & Mills, 1971). Another study involved video recording intoxicated patients at the time of their admission and later splitting the subjects into two groups, those who viewed the videotape and discussed the viewing in group treatment, and a control group that met for group treatment without viewing the videotapes (Faia & Shean, 1976). Results from both studies failed to show initial positive effects of the videotape intervention, with both experimental and control subjects returning to heavy drinking upon termination of treatment (Faia & Shean, 1976; Schaeffer, Sobell, & Mills, 1971).

Some interesting differences were found between experimental and control groups in both of these studies, however. Following the intervention, experimental subjects in the group intervention were more likely to admit having a drinking problem than the group who did not view the videotape prior to the group meeting; however, these individuals returned immediately to heavy drinking following treatment. While these subjects displayed an immediate recognition of problems, patients in the Schaeffer, Sobell, and Mills (1971) study appeared to exhibit a delayed reaction to the intervention, showing increased attendance at 12-step meetings for individuals in the video

confrontation group at a one year follow-up assessment (Schaeffer, Sobell, & Sobell, 1972). It may be that the initial effects of video confrontation were so aversive and shaming initially that it resulted in cognitive dissonance, whereby the subjects were unable to assimilate this new information (Festinger, 1957). Over time, however, the individuals who viewed themselves may have reflected upon their own usage and, ultimately, accommodated to the information that was initially incongruent with their previously held beliefs about themselves when drinking (Piaget, 1969).

There is some additional evidence that the interventions may have been aversive for individuals. In the study conducted by Faia and Shean (1976), the researchers had the subjects watch the previously recorded video sessions of themselves during group sessions with all group members present for the video viewing. Group discussion followed the viewing and focused on “helping subjects integrate the experience of viewing themselves in an inebriated state in a constructive way, as well as providing an opportunity for them to ventilate feelings about the experience” (Faia & Shean, 1976, p. 847). Because the content of the discussion was not clearly delineated by the researchers in this study, it is difficult to determine the therapeutic approach used during the experimental group treatment sessions. Although the researchers used the term “constructive” as a way to describe the session discussions, the researchers also noted that it seemed “unlikely that emphasizing the negative aspects of excessive drinking and showing alcoholics tapes of themselves in a drunken state would have any long-term effect on their drinking behavior” (Faia & Shean, 1976, p. 851), suggesting that the approach may have been less than therapeutic, potentially confrontational, and possibly harmful. Although it cannot be inferred that the outcome data reflects this assertion,

findings indicated that within 60 days following release from the hospital, 13 out of 22 subjects in the experimental condition returned to heavy drinking, as compared with nine of the 24 subjects in the control group. No data were reported about whether or not these results reached statistical significance.

Results of these studies forced researchers and clinicians to examine and re-evaluate their conceptualization of video interventions in the treatment of alcohol-use disorders. Used by itself, self-observation via video seemed to result in increased awareness of problem drinking, yet this insight appeared to be coupled with emotional distress and no changes in problematic consumption. Thus, while video was used by clinicians and researchers to promote insight and provide an objective assessment of behavior, it was not always therapeutic or educational. While it was initially assumed that the use of video to convey information would provide an individual with an objective view into his or her own behavior, it became apparent that the objectivity of an impartial observer viewing the videotape differed from the more subjective view of the individual when viewing his or her own behavior. Rather than motivating individuals to change their behavior, viewing the self was distressing, particularly when the behavior could not be self-corrected. Some researchers theorized that individuals who experienced negative emotional reactions from video viewing who were unable to change the behavior would potentially resort to the only means of coping available to them, most likely the very behavior that was maladaptive and the reason for seeking help initially (see Dowrick, 1991). Indeed, this may have been what occurred during the study conducted by Schaefer, Sobell, & Mills (1971). These researchers found that while individuals voiced

their motivation to change and admitted they were alcoholics, they subsequently increased their alcohol consumption.

There were some studies that attempted to combine video with other existing treatment modalities, and the results seemed promising (Baker, Udin, & Vogler, 1975; Vogler, Weissback, & Compton, 1977). Two of these studies used behavioral interventions in conjunction with the video intervention. In a study conducted by Vogler, Weissback, and Compton (1977), “alcoholics” and “problem drinkers” were randomly assigned to receive either “wet” or “dry” interventions; the “wet” condition involved video replay of drunken comportment, blood alcohol concentration (BAC) discrimination (i.e., learning to estimate blood alcohol using charts that provide BAC levels that correspond to body weight, gender, and drinking pattern combinations), aversion training to raise consciousness of cues associated with blood alcohol levels above 50 mg., and avoidance practice to learn to drink in moderation. The “dry” condition involved alcohol education about moderate consumption, behavioral strategies to teach skills associated with drinking in moderation (i.e., relaxation and assertion training to refuse drinks), and alternative activities to drinking.

At the 12 and 18-month follow-up, subject attrition was considerable. At 12 months, 62 of 80 of the problem drinkers remained, while in the inpatient “alcoholic” sample, only 19 out of 42 original subjects remained. At 18 months, the “alcoholic” sample had been reduced to 14 subjects. Data revealed that all groups reduced their alcohol consumption at both follow-up points. There was only one between group difference found between the “wet” and “dry” alcoholic groups; individuals in the “wet”



group were significantly more likely to select lower proof beverages than were the members of the “dry” group (Vogler, Weissback, & Compton, 1977).

In a study conducted by Baker, Udin, and Vogler (1975), the researchers examined the effects of behavioral therapy in combination with video self-confrontation compared with behavioral therapy alone, role modeling, or standard treatment. Results indicated that participants in the behavioral therapy plus video-confrontation group and the behavioral therapy group alone exhibited decreases in alcohol consumption from baseline to the six-week follow-up. In addition, the video-confrontation group had significantly more days of controlled drinking and abstinence, fewer days incarcerated or hospitalized, greater reporting of outpatient status, and increased follow-up counseling than the other three groups, thus lending support for the effectiveness of video-confrontation (Baker, Udin, & Vogler, 1975).

Although results of these two studies show that behavioral counseling fared as well alone as when it was coupled with video-confrontation, these findings indicate that there may be some positive effects of utilizing video-confrontation that may have been unaccounted for when compared with the behavioral intervention alone. Strangely, a literature review uncovered no additional follow-up studies examining the effects of video feedback in this area. Indeed, although video interventions continued to be utilized in other areas of research, the use of video in the addiction field seemed to have halted after 1977 when the last published study was found. It is unclear what accounted for this abrupt shift and departure. Perhaps non-significant findings led to the file drawer effect, in which the intervention appeared to have been untested but actually had been empirically examined, although the results were not published. Alternatively, views about

confrontation as an effective intervention for substance abuse may have shifted.

Whatever the case, the use of video had fallen out of favor, at least within the area of addictive behaviors.

This study seeks to address some of the limitations of previous studies that incorporated the use of video when attempting to treat alcohol use disorders. For the experimental group, creating a personal video diary over a one week period and viewing oneself after a drinking episode (if one occurred) was expected to lead to increased insight into drinking patterns and behavior. Discussing this experience within the context of a brief motivational-influenced therapy was believed to help minimize the defensiveness, shame, and denial that could emerge when participants were faced with images of themselves that were not consistent with previously held beliefs about their own drinking behavior. This, in turn, was expected to lead to higher levels of motivation to change problematic consumption patterns and behaviors associated with drinking, as well as actually resulting in decreases in the positive expectations of alcohol's effects, decreases in consumption levels, and decreases in problematic behaviors associated with drinking. These effects were expected to be evident in the experimental video diary group, in contrast to participants in the Treatment as Usual (TAU) group. Both groups were recruited from participants beginning treatment, and assessments were conducted at pre-treatment and at a 1-month follow up appointment.

### *Hypotheses*

*Hypothesis 1.* Overall, it was expected that participants in both the experimental video condition and TAU groups would self-report significantly higher levels of

motivation to change substance use, significant decreases in alcohol consumption, decreased alcohol-related problem behaviors, and decreased positive expectancies of the effects of alcohol from the pretest to the one-month follow-up.

*Hypothesis 2.* It was expected that there would be significant differences between the experimental video condition and the treatment as usual (TAU) groups on stages of change as measured by the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) and the Short Form Stages of Change (SFSC), with participants in the video intervention condition self-reporting significantly greater movement along the stages of change than participants in the treatment as usual (TAU) groups at the one-month follow-up.

*Hypothesis 3.* It was expected that participants in the experimental video condition would self-report a significant decrease in the quantity and frequency of alcohol consumption as measured by the 30-day timeline followback (TLFB) when compared with the treatment as usual (TAU) condition at the one-month follow-up.

*Hypothesis 4.* It was expected that participants in the experimental video condition would self-report a significant decrease in alcohol-related problem behaviors as measured by the Rutgers Alcohol Problem Index (RAPI) when compared with the treatment as usual condition at the one-month follow-up.

*Hypothesis 5.* It was expected that participants in the experimental video condition would self-report a significant decrease in positive expectancies of alcohol as measured by the Alcohol Expectancy Questionnaire (AEQ) when compared with the treatment as usual (TAU) condition at the one-month follow-up.

## Method

### *Participants*

For the present study, recruitment of participants occurred at two substance use treatment agencies located in Missoula, Montana. Out of 21 total participants, 13 participants (62%) were students recruited from the Self over Substance (SOS) program at the University of Montana, and 8 participants (38%) were driving under the influence (DUI) offenders recruited from Western Montana Addiction Services, a substance abuse treatment agency. Twenty-one participants were recruited and enrolled in the present study. Of these participants, one participant in the experimental video condition dropped out of the study and did not complete the follow-up measures. Data for this participant were included in the final results, as analyses were conducted on the intent-to-treat sample. Specifically, this participant's baseline data were carried forward to the follow-up data, assuming no change in either direction on any of the dependent variables.

### *Recruitment Sites*

Participants from the Self Over Substance (SOS) program ( $n = 13$ ) were recruited on the campus of the University of Montana, located at Counseling and Psychological Services at the Curry Health Center. Participants from the SOS program were individuals who violated the student conduct code, typically by consuming alcohol on the university campus. Participants were repeat offenders; that is, they had violated the student code more than once and were returning to complete the second phase of the SOS program.

Some of the research on MI from recent clinical trials indicate that MI influenced therapies are more effective in increasing motivation to change substance use behavior

with individuals who consume more alcohol and experience more alcohol-related problems than those who are considered lighter drinkers (Murphy et al., 2001; Tevyaw & Monti, 2004). Students mandated to treatment received a letter from the SOS director describing the study and asking whether they would like to participate in a brief intervention for alcohol use, in addition to their SOS treatment requirement. Because these students were mandated to treatment, the letter clearly stated that participation in this research would be completely voluntary and that declining to participate would not affect completion requirements of the SOS program (See appendix A for recruitment letter.)

Recruitment efforts also included visits to SOS group sessions by the principal investigator. During these meetings, the principal investigator introduced the study (see Appendix B) and passed around a sign-up sheet for more information. Individuals were informed that signing up for more information did not commit them to participation in the study; rather, it was clearly stated that individuals who signed up would be contacted, provided with further information, and then be offered the option of participating. Individuals who expressed interest on the sign up sheet were contacted by the principal investigator. Students who agreed to participate were randomly assigned to either treatment as usual or to the experimental intervention. Students assigned to the experimental intervention were also required to complete their treatment requirements as outlined by their original referral.

Participants who were recruited from Western Montana Addiction Services were a combination of first-time offenders ( $n = 5$ ) and repeat offenders ( $n = 3$ ), the latter having received at least one DUI prior to their current treatment referral. Although attempts were

made initially to recruit individuals with more than one DUI offense, this qualification severely limited recruitment efforts. Not only were the majority of individuals mandated to treatment first-time offenders, but after repeated attempts to solicit repeat offenders, very few expressed any interest in participating in the study.

Individuals who were mandated to the Western Montana Addiction Services treatment agency for DUI offenses were recruited during their initial group intake session. The principal investigator described the study, passed around a sign-up sheet, and provided all potential participants with an informational handout about the study and contact information should they decide they would like to participate (See Appendix C for information about the study and Appendix D for handout and contact information). All potential participants were assured that participation was completely voluntary and that choosing to either participate or decline to participate in the study would not affect completion of the original mandated program requirements; that is, they would still be required to complete their program requirements as planned.

Because participants were mandated to treatment, it was estimated that retention efforts for this research study might be difficult. Therefore, each participant was compensated for completion of assessments. Because paying participants to attend treatment sessions may have exerted unwanted influence on treatment outcomes, participants were not paid for their attendance at the video intervention sessions.

Participants recruited from the SOS program were offered a choice of monetary compensation or research credits for their time. They either received experimental research credits toward fulfillment of their course requirements (this was applicable to  $n = 3$  students taking psychology courses), or monetary compensation. Monetary

compensation included a \$10 incentive for the first assessment period at baseline and a \$15 incentive for the final assessment at the one month follow-up.

Participants recruited from Western Montana Addiction Services received a \$20 incentive for the first assessment period at baseline and a \$30 incentive for the final assessment at the one month follow-up. Participants recruited from this community sample were offered more monetary compensation in order to account for the increased cost requirement of treatment at Western Montana Addiction Services.

### *Measures*

*Alcohol Use Disorders Identification Test (AUDIT)*. The AUDIT (Saunders, Aasland, Babor, De la Fuente, & Grant, 1993) is a self-report screening measure that was developed by the World Health Organization and was designed to provide information about patterns of problematic alcohol use. There are 10 items that comprise three factors considered to reflect hazardous drinking patterns: 1) quantity and frequency of alcohol consumption, 2) alcohol-related problems, and 3) dependence symptoms (see Appendix E for a sample of the AUDIT). There is mixed evidence about the factor structure of the AUDIT however, and most often the three factors are collapsed into composite total score (Maisto, Conigliaro, McNeil, Kraemer, & Kelley, 2000). The 10 items are scored on a 0 to 4 ordinal scale with a range of 0 to 40. Higher scores indicate an increased probability of alcohol problems, and a cut-off score of 8 is generally used to detect problems with alcohol use. Scoring involves adding up the response range of the items from 0 to 4. A total score of 8 or more is indicative of alcohol-related problems.

The AUDIT has been considered to have good sensitivity and adequate specificity (Conigrave, Hall, & Saunders, 1995). In a study that examined the validity of the AUDIT in detecting alcohol abuse and dependence problems among college students, the AUDIT demonstrated adequate internal reliability ( $\alpha = .81$ ) and good sensitivity and specificity, particularly in determining high risk alcohol use over the past 28 days (Kokotailo et al., 2004). In another study comparing the validity of the AUDIT with other alcohol use screening measures to detect alcohol-related problems among adolescents, it was found that the AUDIT had the highest sensitivity (.88) and specificity (.81) when compared with the other screening measures (Knight, Sherritt, Harris, Gates, & Chang, 2003). In the present study Cronbach's  $\alpha$  was calculated to measure the internal consistency of scores among this sample. For this sample, the AUDIT demonstrated adequate internal consistency ( $\alpha = .81$ ).

*Rutgers Alcohol Problem Index (RAPI)*. The RAPI (White & Labouvie, 1989) has been used to assess potential problem drinkers in adolescence through adulthood and is based on the past six months of the respondents' alcohol usage. The RAPI is a self-report measure composed of 23-items (e.g., "caused shame or embarrassment to someone..."), and is scored using Likert scale items with anchors ranging from 1 to 5 with 1 equaling "never" to 5 equaling "more than 10 times." Scoring is derived by summing the frequency of problems endorsed. (see Appendix F for a sample RAPI). The psychometric properties of the RAPI have been empirically examined in a longitudinal study using 1,308 adolescents tested once at 12, 15, and 18 years of age, and again three years later at 15, 18, and 21 years of age. Internal consistency estimates were an  $\alpha$  of .92 at Time 1 and .93 at Time 2. Convergent validity with use intensity measures is



adequate,  $r$ 's ranging from .20 to .57. Therefore, White and Labouvie (1989) recommend that problem behavior scores on the RAPI be used in conjunction with use intensity measures to improve diagnoses of adolescent alcohol problems (White & Labouvie, 1989). This study will use the Timeline-Followback and the AUDIT in combination with the RAPI to obtain a more accurate assessment of problem drinking. In the present study Cronbach's *alpha* was calculated to measure the internal consistency of scores among this sample. The RAPI demonstrated very high internal consistency ( $alpha = .96$ ) for this sample.

*The Timeline Follow-Back Interview (TLFB).* The TLFB (Sobell & Sobell, 1973) is a semi-structured interview used to determine the quantity and frequency of alcohol consumption. The TLFB uses a calendar and asks respondents to provide accounts of daily drinking over a varying time-period ranging anywhere from 30 days to 12 months prior to the interview. The interviewer aids respondents' recall by using specific anchor points (e.g. birthdays, holidays, payday, and weekends) and using a standard drink conversion chart to determine variety of drinks and total amount consumed. Scoring for the TLFB involves summing the total number of drinks and total number of drinking days over the time-period measured. To obtain an average of daily consumption of drinks per drinking day, total number of drinks is divided by the total number of drinking days. Weekly averages are obtained by dividing the total number of drinks by the time-period measured, multiplied by seven.

The TLFB has been used among problem and normal drinking populations, in conjunction with collateral reports, and in comparison with official records, such as reports of jailed days, hospitalizations, pre and post treatment facilities (Sobell & Sobell,

1992). In addition, concurrent validity has been determined by examining correlations between the TLFB and other established alcohol measures, and correlations between the TLFB and biochemical tests used to measure alcohol related acute hepatic dysfunction (Sobell & Sobell, 1992).

The TLFB has maintained an exceptional record of reliability and validity in the alcohol research field (Breslin, Sobell, Sobell, Buchan, & Kwan, 1996; Cervantes, Miller, & Tonigan, 1994; Cohen & Vinson, 1995; Connors, Watson, & Maisto, 1985; Grant, Tonigan, & Miller, 1995; Sobell, Sobell, Khajner, Pavon, & Basian, 1986; Sobell, Sobell, Reiley, & Schuller, 1988; Sobell & Sobell, 1992). Studies of the psychometric properties of the TLFB as a measurement of alcohol consumption have found high temporal stability, with test-retest reliabilities for most key variables exceeding an *alpha* of .85.

Another study measuring the psychometric properties of the TLFB using a sample of drug-abusing patients found the TLFB to have strong test-retest reliability, adequate convergent validity with the Michigan Alcohol Screening Test, the Addiction Severity Index, and the Drug Abuse screening Test, with *r*'s ranging from .32-.44, .30-.36, .44-.51 respectively (Fals-Stewart, Freitas, McFarlin, O'Farrell, & Rutigliano, 2000). In addition, the authors found good discriminant validity, agreement with collateral informants' reports of patient's substance use, and agreement with results from patient's urine assays (Fals-Stewart et al., 2000).

For the present study, trained graduate student research assistants administered the paper and pencil version of the TLFB. Number of drinks and drinking days over the previous 30-day period were recorded. Participants were asked to bring a date book or

calendar to aid recall during administration (see Appendix G for a sample TLFB calendar and Appendix H for a sample drink card).

*The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES).*

The SOCRATES (Miller & Tonigan, 1996) is a 19-item self-report questionnaire that measures individuals' readiness to change alcohol use patterns. Originally derived from the transtheoretical model of change, in which stages of changing behavior occur on a continuum where individuals cycle through various stages before ultimately changing behavior, Prochaska, Diclemente, & Norcross (1992) developed the University Rhode island Change Assessment Scale (URICA), to measure an individuals readiness to change behavior. Where the URICA focused on a wide area of settings and behavioral domains, the SOCRATES was developed as a more parsimonious measure of change specific to problematic alcohol consumption. Change is measured by three factor analytically-derived scales: 1) ambivalence about consumption patterns, 2) recognition of problems, and 3) taking steps to change. Based upon factor analyses from previous versions of the 39-item form of the SOCRATES, the 19-item scale was created. The 19-item scale produced *alphas* of .60-.88 for the Ambivalence factor, .85-.95 for the Recognition factor, and .83-.96 for the Taking Steps to change factor. Items are measured on a Likert-type scale from 1 to 5, with 1= no, strongly disagree, 2 = no, disagree, 3 = undecided/unsure, 4 = yes, agree, and 5 = yes, strongly agree. Scoring involves summing the total responses for each of the three factors (see Appendix I for a sample SOCRATES). For this study, Cronbach's *alpha* coefficients were .84 for the Ambivalence factor, .92 for the Recognition factor, and .83 for the Taking Steps factor.

*Short Form Stages of Change (SFSC).* The SFSC (Heather, N. Gold, R. & Rollnick S., 1991) The SFSC is a five item questionnaire originally developed by Di-Clemente, Prochaska, Fairhurst, Velicer, Velasquez, and Rossi (1991), then modified by Heather, Gold, and Rollnick (1991) and Laforge (1998) for use with individuals with alcohol-use disorders. A brief screening tool to measure discrete stages of change, the measure consists of a single question with five possible responses; each response is indicative of a stage level. Respondents are assigned to precontemplation, contemplation, preparation, action, or maintenance based on their response: 1 = precontemplation, 2 = contemplation, 3 = preparation, 4 = action, and 5 = maintenance (see Appendix J).

*The Alcohol Expectancy Questionnaire (AEQ).* The AEQ (Brown, Goldman, Inn, & Anderson, 1980) is a 90 item self-report measurement that assesses the expectations or preconceived beliefs about the positive effects of alcohol on oneself. It is designed to assess the domain of alcohol reinforcement expectancies and consists of six factor-analytically derived subscales: positive global changes in experience, sexual enhancement, social and physical pleasure, assertiveness, relaxation/tension reduction, and arousal/interpersonal power. The total score and subscale scores are predictive of current and future drinking practices, persistence and participation in treatment, and relapse following treatment. Questions are presented in a forced choice format and respondents are asked to answer according to their own beliefs, feelings, and experiences with alcohol, rather than how others view them.

The 90 items were originally derived from an initial item pool of 216 statements from 125 individuals that were interviewed singly and in groups. Items were content analyzed and factor analyzed to determine the domains of alcohol expectancies. Some

sample questions include: “Drinking makes the future seem brighter” and “Alcohol seems like magic” from the Global Positive Changes Factor, “I often feel sexier after I’ve had a few drinks” from the Sexual Enhancement Factor, “Some alcohol has a pleasant, cleaning, tingly, taste”, from the Physical and Social Pleasure Factor, “A few drinks makes it easier to talk to people” from the Increased Social Assertiveness Factor, “Alcohol makes me worry less” from the Relaxation and Tension Reduction Factor, and “I feel powerful when I drink, as if I can really influence others to do what I want” from the Arousal and Aggression Factor (see Appendix K for a sample AEQ). Psychometric evaluation of the AEQ has resulted in reports of acceptable score reliabilities ranging from 0.72 to 0.92 for the six subscales (Brown, Christiansen, & Goldman, 1987), with a mean coefficient of 0.84, although other studies have found reliability coefficients as low as 0.27 for the Arousal/Aggression subscale (Leigh, 1989). Scoring for the AEQ involves summing individual items comprising each scale.

Internal consistency of scores measured on the AEQ within this study sample revealed large variability among internal consistency scores, with *alphas* ranging from .50-.90. *Alphas* were .90 for the Global Positive factor, .71 for the Sexual Enhancement factor, .68 for the Physical and Social Pleasure factor, .85 for the Increased Social Assertiveness factor, .53 for the Relaxation and Tension Reduction factor, and .50 for the Arousal and Aggression Factor. When score items do not correlate at .70 or above it is possible that the scale items are measuring different attributes or that the scores are affected by random error, indicating that the test is not a reliable measure. Other studies utilizing the AEQ have found adequate internal consistency within most of the factor levels (see Brown, Christiansen, & Goldman, 1987; Brown, Goldman & Christiansen,

1985); therefore, it may be that these low score correlations are related to the small number of items that make up the factors or potentially due to the small sample size in this study.

### *Procedure*

All participants were recruited from their respective agencies. Participants were recruited from Western Montana Addiction Services during their initial group meeting and participants from the Self Over Substance (SOS) program were recruited during their first or second group treatment meeting. The principal investigator introduced the study and provided informational handouts. A sign-up sheet was passed out and individuals who expressed interest in the study provided their contact information.

Individuals who agreed to participate were randomly assigned to receive either the experimental video intervention or treatment as usual (TAU) from their respective agencies. Trained graduate students in clinical psychology who were blind to the participants' treatment conditions assessed all participants on two occasions: once at baseline and once again at the one-month follow-up. All participants had completed their treatment as usual and/or the experimental intervention prior to the one-month follow-up assessment meeting.

During both the baseline assessment and one-month follow-up meeting, a trained graduate student research assistant met with participants individually in a private room at their respective agencies or at the Clinical Psychology Center, located on the University of Montana campus. Permission to recruit from sites and permission to use facilities to meet with participants was granted by the directors from each agency.

Participants read and signed the consent form and were assessed for demographic characteristics (see Appendix L), treatment history, quantity/frequency of alcohol use, severity of alcohol use problems, expectations about the effects of alcohol on oneself, and current stage of change regarding alcohol use behavior. Each assessment meeting took approximately one hour. All assessment measures other than the TLFB were self-report measures. The TLFB is a semi-structured interview that was administered to participants by the trained graduate student research assistant prior to having the participant complete the self-report measures. All measures were partially counterbalanced as an attempt to control for any possible order effects that may have occurred when administering the same measures at pre and post intervention.

Immediately following the baseline assessment meeting, the principal investigator met with all participants. Participants who were assigned to the TAU condition met with the principal investigator to schedule a one-month follow up meeting following completion of their program requirements (see section below for more information about TAU sessions). Participants who were assigned to the video intervention condition were asked to take the camera to their place of residence and asked to make a daily “video diary” over the next week, regardless of whether or not they consumed alcohol (see section below for more information about the experimental video intervention).

Participants in all conditions returned after one-month to complete a follow-up assessment. This meeting was identical to the baseline assessment meeting, other than including a debriefing of the study. All participants received the same measures that they filled out at baseline. Again, assessments were administered by a trained graduate student in clinical psychology who was blind to the participants’ treatment conditions.

### *Experimental Video Intervention*

Participants receiving the experimental video intervention met with the principal investigator individually on two occasions (approximately 30 minutes during the first session and 60 minutes during the second session). During the first meeting, participants were provided with instructions on the use of the video camera, as well two scripts to instruct them about what questions to respond to on a given day (refer to Appendices M and N for information provided to participants and video camera scripts). One script was used for the days the participant did not drink alcohol and asked participants to describe their mood that day, whether they had thoughts about drinking, what influenced their decision to abstain from drinking that day, and their thoughts about their alcohol use (i.e., if they had thought about or noticed any changes in their drinking). The second script was used on the days that participants either planned on engaging in a drinking episode, or if they happened to engage in an unplanned drinking episode. On these days, participants were asked to respond to a series of questions about their mood, quantity and frequency of alcohol consumption, their ideal and actual consumption, their thoughts about the planned or unplanned drinking episode, and their expectations about the drinking event and whether their beliefs were consistent with their expectations.

Participants were asked to videotape themselves at their place of residence. When participants were unable to videotape themselves right after a drinking episode (e.g., they did not return home that evening, forgot, fell asleep), they were asked to tape themselves whenever they could, as soon as possible following the actual drinking event.



After participants had the video camera in their possession for one week, they returned for the second one-hour session with the principal investigator. During this individual meeting, participants viewed the videotape with the principal investigator. In most cases, the investigator and the participant viewed all of the material on the videotape. This process took approximately 20-30 minutes of the second session. While watching the video with participants, the investigator searched for themes that emerged during the video viewing that characterized the participants' relationship with alcohol. These themes were discussed in the remainder of the interview, which was motivationally-styled in nature. Consistent with the style of motivational interviewing, the exact discussion between the investigator and the participant during this meeting was tailored to the individual experience of each participant. Namely, the participant's key themes and readiness to change drinking behavior were taken into account when structuring this feedback session.

Prior to engaging in the brief motivational intervention and *before* watching the videotape, participants were asked if they observed anything about themselves and their drinking behavior over the course of the prior week when videotaping themselves daily. After viewing the videotape and prior to the motivational intervention participants were queried again about what they observed about themselves *after* viewing the videotape. This question was unstructured and open-ended; designed to evoke participants' thoughts about their own individual behaviors and concerns. Responses to this question varied and included thoughts about physical appearance, mood, verbal expression when drinking, amount consumed, and reasons for drinking.

For example, some of the participants noted changes in their physical appearance and verbal expressions. One participant mentioned that he looked like he “wasn’t in a good mood” when consuming alcohol, although he had believed that alcohol would induce a positive mood state and his reasons for consuming alcohol were mostly related to the expectation that it would help his mood. Another participant noted after viewing the videotape that his appearance was “worse” and that he was “surprised” that “I wasn’t slurring my words.” After watching the video one participant commented on the positive aspects of her appearance and behavior, stating that she looked better than she thought she would after drinking, and that she had thought she would have been “slurring” her words and “saying something stupid.”

Following this discussion a motivationally-styled interview was conducted utilizing the model for a brief form of motivational interviewing developed by Rollnick, Heather, and Bell (1992). Initially developed for use in a medical setting where time-limited consultations with a medical provider are often the norm, this brief motivational intervention was designed with a menu of strategies for practitioners to use depending upon the time available and progress made by the client. Strategies are chosen based upon clients’ individual needs and degree of readiness to change. Therefore options may range from using just one to all menu items during a single meeting.

Some of the Menu items outlined by Rollnick, Heather, and Bell (1992) include the following: 1) Opening strategies that involve talking in general terms about lifestyle and stresses in order to understand the context in which individuals use the substance. Questions are asked to elicit these types of thoughts such as: “where does your use of \_\_\_\_ fit in?” or “How does your use of \_\_\_\_ affect your health?” 2) Inquiring about what a

typical day might look like for the individual when using the substance. The goal is to build rapport and use open ended questions to elicit behaviors and feelings about the individual's substance use. 3) Discussion about "the good things and the less good things" about alcohol use. The purpose of this strategy is to allow the individual to explore the pros and cons of using the substance. Questions here include: "What are some of the good things about your use of \_\_\_?" and "What are some of the less good things about your use of \_\_\_." This is followed by summarizing what the individual has stated and exploring any potential ambivalence. 4) Discussion about where the individual is in the present time with respect to their substance use and where the individual would like to be in the future. These inquiries are designed to develop discrepancy between where the individual is presently and future desires and expectations. Questions at this stage are "how does your use of alcohol affect you right now," "how would you like things to be different in the future?" and "what's stopping you from doing the things that you would like to do?" Exploration of the discrepancy between present and future allows the individual to think about and express any concerns about drinking and discuss any steps toward making changes in drinking behavior. Finally, helping with decision making is used when individuals express a desire to change some aspects of their drinking behavior. A question that might be asked at this stage is "where does this leave you now?"

For this study, these types of questions were discussed in conjunction with participants' responses on the videotape following the videotape viewing with the principal investigator. Any themes that emerged from participants responses on tape were highlighted and explored further. In this way the discussion content was tailored to participants' specific concerns about their own alcohol use. Questions were designed to

raise awareness and potentially enhance discrepancy between participants' own beliefs about drinking and actual behavior as it related to viewing themselves on video.

*Treatment as Usual: Self Over Substance*

Participants receiving treatment as usual in the SOS program attend an individual intake (90 minutes) and follow-up meeting (60 minutes) with a treatment provider (usually a student intern), as well as six group sessions lasting approximately 90 minutes each. Both individual and group sessions are MI influenced, designed to promote discrepancy between ideal and actual goals by inquiring about views about drinking, expectations of behavior when drinking, and perceived consequences and benefits of continuing to consume alcohol at the current level.

During the individual intake session, the discussion is focused on adjustments to campus life, personal and professional goals, substance use patterns, and any resulting negative behavioral consequences that may contribute to health risks. Students are asked to fill out a risk assessment after the initial session and to monitor their substance use until they return for a second interview approximately two weeks later. During the individual follow-up meeting, students receive feedback and specific advice about ways to reduce alcohol consumption and decrease the behavioral and health risks associated with alcohol or other drug use.

Adapted from the Brief Alcohol Screening and Intervention for College Students (BASICS) manual developed by Dimeff, Baer, Kivlahan, and Marlatt (1999), a graphic feedback sheet is provided for students and includes personalized feedback about patterns of alcohol use compared with actual norms for college students and an overview of the

student's risks for alcohol-related problems. The treatment provider reviews this information with students, answers any questions, and provides additional information about blood alcohol levels and alcohol's effects at varying levels.

Group sessions involve once a week meetings for six weeks with two group facilitators (usually student interns). Group meetings are designed to raise consciousness about alcohol use, reevaluate choices about substance use, and exploring decisions to use substances and the negative consequences associated with usage. Facilitators provide opportunities for group members to discuss the benefits and drawbacks of substance use. They discuss motivation to change and explore options to address students' specific experiences, emphasizing discussion topics that include exploring positive and negative alcohol expectancies, pros and cons of use, coping skills, and situational, cognitive, and emotional triggers to drinking.

*Treatment as Usual: Western Montana Addiction Services*

Participants assigned to the treatment as usual condition at Western Montana Addiction Services attended four group sessions, two hours each, over the course of a one-month period. Groups are psychoeducational only and provide information about Montana law with respect to drinking, the consequences of use, the victim advocates program, signs and symptoms of alcohol misuse, and the physiological effects of alcohol on the self. During these meetings information is presented by viewing videotapes accompanied by informational handouts and educational lectures by a treatment provider.

## Results

### *Sample Demographics*

Forty-eight percent of participants were female ( $n = 10$ ) and 52% were male ( $n = 11$ ), with ages ranging from 18-45 years and an average age of 24.33 ( $SD = 8.33$ ). Education ranged from 11-16 years of education, with an average of 12.95 years ( $SD = 1.28$ ). Participants reported income ranging from \$0-\$54,000 per year, with an average of \$11,667 ( $SD = 12,159$ ). Two participants reported receiving no income. Approximately 86% ( $n = 18$ ) of the participants were White/European American. Of the three remaining participants, one identified as American Indian/Native American, one as American Indian/Native American/ Hispanic/Latino/a, and one as American Indian/Native American/Asian/Asian American.

Seventy-six percent of participants ( $n = 16$ ) reported a family history of alcohol problems, and approximately 48% of participants ( $n = 10$ ) reported receiving treatment for alcohol use alcohol previously. Of those, seven participants (78%) reported attending treatment twice prior to their current treatment episode, and two participants (22%) reported receiving treatment once previously. Only seven participants indicated what type of prior treatment was received. Five participants reported receiving some form of outpatient treatment, one reported receiving inpatient treatment, and one participant reported receiving detoxification treatment.

Twenty-four percent of participants ( $n = 5$ ) reported attending Alcoholics Anonymous (AA) meetings previously, while 76% percent ( $n = 16$ ) reported no previous AA attendance. Three participants (14%) reported receiving treatment for drug use

previously with a range of 1-3 times in treatment. Approximately 10% of participants ( $n = 2$ ) reported attending Narcotics Anonymous (NA) previously.

Seventeen participants reported using alcohol ranging from 1-27 days during the past 30 days prior to the beginning of the study ( $M = 9.14$ ;  $SD = 6.84$ ), and 14 participants reported using alcohol to intoxication from 1-15 days ( $M = 5.19$ ,  $SD = 4.52$ ) during the past 30 days, with 22% ( $n = 4$ ) reporting no days of intoxication. Seven participants reported using alcohol three or more times a week, with a range of 6 months to 11 years of drinking at this level ( $M = 2.08$ ;  $SD = 2.60$ ).

Slightly less than half of the sample ( $n = 9$ ) reported using cannabis, ranging from 1-30 days ( $M = 7.11$ ;  $SD = 11.59$ ) during the past 30 days. Two participants reported hallucinogen use during the past 30 days, one participant reported cocaine use, and one reported methamphetamine use. One participant reported the use of barbiturates, and two reported the use of sedative/hypnotic/tranquilizer during the past 30 days (see Table 1 for all sample characteristics).

#### *Analyses with all Participants*

To determine whether participants in both the experimental video condition and TAU groups self-reported a significant decrease from baseline to the one-month follow-up on alcohol consumption, days drinking, alcohol-related problem behaviors, and decreased positive expectancies of the effects of alcohol, a series of paired sample  $t$ -tests were conducted on differences on the mean scores from pre-test to post-test on the TLFB, RAPI, AUDIT, and AEQ. There were no significant differences on the number of drinks consumed over the past 30 days as measured by the TLFB from baseline ( $M = 58.86$ ,  $SD = 65.86$ ) to the one-month follow-up ( $M = 56.43$ ,  $SD = 57.82$ ),  $t(20) = .431$ ,  $p = .671$ .

Similarly, there were no significant differences on number of days drinking as measured by the TLFB from baseline ( $M = 8.67$ ,  $SD = 6.34$ ) to the one-month follow-up ( $M = 8.48$ ,  $SD = 7.32$ ),  $t(20) = .293$ ,  $p = .772$ .

When examining whether there were differences in participants' self-reported alcohol-related problem behaviors from baseline to the one-month follow-up as measured on the AUDIT, significant decreases in alcohol-related problem behaviors were found for all participants from pretest ( $M = 14.80$ ,  $SD = 6.97$ ) to the one-month follow-up ( $M = 12.46$ ,  $SD = 7.12$ ),  $t(19) = 2.55$ ,  $p = .020$ . Similarly, on the RAPI, participants reported a significant decrease on alcohol-related problem behaviors from pretest ( $M = 56.24$ ,  $SD = 22.10$ ) to the one-month follow-up ( $M = 42.71$ ,  $SD = 18.76$ ),  $t(20) = 2.84$ ,  $p = .010$ .

On the AEQ, no significant differences emerged for participants for self-reported expectations of the positive effects of alcohol; AEQ total scores from pretest ( $M = 67.90$ ,  $SD = 24.19$ ) did not significantly differ from the one month follow-up ( $M = 67.19$ ,  $SD = 24.63$ ),  $t(20) = .202$ ,  $p = .842$ . Similarly, there were no significant differences found among the six factors of the AEQ (refer to Table 2 for results on the TLFB, RAPI, AUDIT, and AEQ).

To determine whether participants reported any motivation to change from baseline to the one-month follow-up as measured by stages of change, paired-samples  $t$ -tests were conducted on the continuous variables from the three factors of stages of change measured by the SOCRATES (Ambivalence, Recognition and Taking Steps). Prior to conducting  $t$ -tests, mean scores for each of the three factors on the SOCRATES were examined to determine participants' level of readiness to change at baseline. Baseline scores indicated that participants scored low on Ambivalence ( $M = 9.29$ ,  $SD =$



4.24), low on Recognition ( $M = 15.33$ ,  $SD = 7.39$ ), and low on Taking Steps to change ( $M = 25.10$ ,  $SD = 7.21$ ), indicating that, on average, this sample of participants were in the precontemplation stage with regard to making changes in their drinking. Individuals in the precontemplation stage, as measured by the SOCRATES, are generally *not* considering whether they consume too much alcohol, whether they are in control of their drinking, whether they are hurting others, or whether they are experiencing alcohol-related problems.

Paired-samples *t*-tests revealed that there were no significant differences on the mean scores from baseline to the one-month follow-up on the Ambivalence ( $t < .001$ ,  $p = 1.00$ ), Recognition ( $t < .331$ ,  $p = .744$ ), or Taking Steps ( $t < -.371$ ,  $p = .714$ ) factors of the SOCRATES indicating that overall, participants' readiness to change did not alter over the course of treatment (see Table 3).

For the ordinal data, Wilcoxon's Sign Rank Test was conducted on the Short Form Stages of Change measure (SFSC) to determine whether participants moved forward or backward along the stages of change as well as the magnitude of movement along stages. The Wilcoxon's Sign Rank Test is considered a non-parametric alternative to the paired-samples *t*-test when analyzing data that is not normally distributed. In this study, a non-parametric alternative was chosen after conducting a Kolmogorov-Smirnov test to assess for normality of the distribution of baseline and follow-up scores on the SCSF ( $p < .01$  on the Kolmogorov-Smirnov test, indicating significant non-normality). Consistent with stage assignment on the SOCRATES, readiness to change behavior, as measured on the SFSC at baseline, indicated that most participants identified themselves as being in the precontemplation stage of change (43%;  $n = 9$ ). Of the remaining

participants, 10% ( $n = 2$ ) identified themselves as being in the contemplation stage, 24% ( $n = 5$ ) in the preparation stage, 19% ( $n = 4$ ) in the action stage, and 4% ( $n = 1$ ) self-identifying as a non-binger (never consuming more than 5 drinks [4 drinks if a female] on any occasion).

The results from the Wilcoxon Signed Ranks test indicated that there was no statistically significant movement for participants along the stages of change, as measured by the SFSC, from baseline to the one-month follow-up,  $z = -1.09$ ,  $p = .276$ , with most participants remaining in the same stage of change from baseline to the one-month follow-up. There was evidence however, for some movement along the stages, with two participants in the experimental video condition moving backward to earlier stages, and one participant in the TAU condition moving forward (see Table 4). More specifically, in the experimental video group one participant moved backwards from the action stage to contemplation, and the other from preparation back to precontemplation. In the TAU group, one participant progressed forward from preparation to action. It should be noted that this measure is not optimally sensitive to changes in participants' readiness; it is a one-item, self-report measure that has not been extensively validated in other studies of this nature.

To determine whether findings on the SCSF corresponded with any stage of change movement on the SOCRATES for the three participants who did evidence change on the SCSF, individual scores for these three participants were examined on each of the three factors of stages of change on the SOCRATES. For the participant who moved forward one stage on the SCSF from preparation to action, scores on the three factors of the SOCRATES showed similar movement through the factors from the baseline through

the follow-up period, exhibiting movement from low to high scores on Ambivalence, low to medium scores on Recognition, and high to very high scores on Taking Steps to behavior change.

The two participants who self-reported backward movement through stages of change on the SFSC exhibited no change movement at all when measured on the SOCRATES from baseline to the follow-up. Based on their mean scores from baseline to follow up, these two participants were in the precontemplation stage at baseline and remained in the precontemplation stage at the one-month follow-up, self-reporting low score levels on the Ambivalence, Recognition, and Taking Steps factors of the SOCRATES at both time periods.

#### *Between-Groups Analyses*

To analyze whether the experimental video intervention group exhibited any significant differences in readiness to change from the baseline to the one-month follow up when compared with the TAU group, three one-way ANCOVAs were conducted on the three stage of change factors of the SOCRATES (Ambivalence, Recognition, and Taking Steps), with baseline stage of change scores for each of the three factors entered as covariates to control statistically for any pre-existing differences between the groups.

For the Ambivalence factor of the SOCRATES, a one-way between groups ANCOVA was conducted with baseline Ambivalence scores entered as the covariate, treatment group (video vs. TAU) as the independent variable, and Ambivalence scores at one-month follow-up entered as the dependent measure. After adjusting for the baseline scores there were no significant differences between the treatment groups on the follow-

up Ambivalence scores from the SOCRATES,  $F(1,18) = .56, p = .464$ , partial *eta squared* = .030 indicating a small effect size. For the Recognition factor of the SOCRATES, a one-way between groups ANCOVA was conducted with baseline Recognition scores entered as the covariate, treatment group (video vs. TAU) as the independent variable, and Recognition scores at one-month follow-up entered as the dependent measure. After adjusting for the baseline scores, there were no significant differences between the treatment groups on the follow-up Recognition scores from the SOCRATES,  $F(1,18) = .47, p = .500$ , partial *eta squared* = .026 (small effect). Similarly, for the Taking Steps factor of the SOCRATES, a one-way between groups ANCOVA was conducted with baseline Taking Steps scores entered as the covariate, treatment group (video vs. TAU) as the independent variable, and Taking Steps scores at one-month follow-up entered as the dependent measure. After adjusting for the baseline scores, there were no significant differences between the treatment groups on the follow-up Taking Steps scores from the SOCRATES,  $F(1,18) = 2.91, p = .105$ , partial *eta squared* = .139, indicating a small effect size (see Table 5 for ANCOVA results for each of the 3 factors of the SOCRATES).

To determine whether there were any significant differences between the experimental video group and the TAU group on stage of change movement from baseline to the one-month follow-up on the SCSF, scores from baseline to follow-up on the SCSF were first converted to change scores and a Mann-Whitney U test was conducted. The Mann-Whitney U test is a non-parametric alternative to the independent samples *t*-test and is often used for data that is not normally distributed and ordinaly ranked. To check for normality in this sample, normality of the distribution for baseline

and follow-up scores on the SCSF were assessed using the Kolmogorov-Smirnov test. Results indicated that the assumption of normality was violated for both baseline and follow-up scores ( $p < .01$ ).

Results from the Mann-Whitney U test indicated that movement through stage of change levels did not differ significantly between the two groups,  $U = 35$ ,  $z = -1.77$ ,  $p = .076$ ; however, a non-significant trend was noted for the TAU group, indicating that participants in this condition were progressing forward through the stages of change relative to the experimental video group (see Table 6).

To determine whether participants in the experimental video condition self-reported a significant decrease in the quantity and frequency of alcohol consumption relative to the TAU group from baseline to the one-month follow-up period, a one-way between groups ANCOVA was conducted with the experimental video group and the TAU group as the independent variable, mean number of drinks on the TLFB at follow-up as the dependent measure, and mean number of drinks on the TLFB at baseline entered as the covariate. After adjusting for any baseline differences, there were no statistically significant differences found between the groups in self-reported number of drinks during the past 30 days,  $F(1,18) = .040$ ,  $p = .844$ , partial *eta squared* = .002 or number of days drinking,  $F(1,18) = .374$ ,  $p = .549$ , partial *eta squared* = .020 as measured by the TLFB (see Table 7). Further inspection of the data for the TLFB indicated that the data were not normally distributed and positively skewed for number of drinks on the TLFB. As an attempt to correct for this a logarithmic transformation was conducted on baseline and follow-up data for the number of drinks on the TLFB. The Analysis

conducted with this transformation was non-significant,  $F(1,18) = .081, p = .779$ , partial *eta squared* = .005.

To measure whether participants in the video intervention group self-reported significant decreases in alcohol-related problem behaviors when compared with the treatment as usual group from baseline to the one-month follow-up, two one-way ANCOVAs were conducted; both with the treatment groups as the independent variable, one with the follow-up RAPI scores as the dependent variable and baseline RAPI scores entered as the covariate, and the other with AUDIT follow-up scores as the dependent measure and baseline AUDIT scores entered as the covariate. After adjusting for baseline differences, there were no statistically significant differences found between the experimental video and TAU groups on the follow-up scores of the AUDIT,  $F(1,17) = .717, p = .409$ , partial *eta squared* = .040. Although not significant, on the RAPI, there was a trend toward differences in alcohol-related problem behaviors between the groups,  $F(1,18) = 2.56, p = .127$ , partial *eta squared* = .127, indicating a small effect size. Closer inspection of the adjusted means between the two groups showed that the TAU group reported greater decreases in alcohol-related problem behaviors from baseline to follow-up relative to the experimental video group, suggesting that individuals who received treatment as usual exhibited fewer alcohol-related problems following treatment than individuals who received the experimental video intervention (see Table 8).

Finally, to analyze whether participants in the video intervention group reported significant decreases in the positive expectations of alcohol's effects as compared with the treatment as usual group from baseline to the one-month follow-up, a series of seven one-way ANCOVAs were conducted, one for the total score and each of

the six factors of the AEQ (Global Positive Changes, Sexual Experience and Arousal, Physical and Social Pleasure, Increased Social Assertiveness, Relaxation and Tension Reduction, Arousal and Aggression). Baseline total scores and scores for each of the six factors were entered as covariates for each dependent measure. After adjusting for baseline differences, there were no significant differences between the two groups on the AEQ total score  $F(1,18) = 1.772, p = .200$ , partial *eta* squared = .090, Global Positive factor  $F(1,18) = .641, p = .434$ , partial *eta* squared = .034, Sexual Experience factor  $F(1,18) = .419, p = .526$ , partial *eta* squared = .023, Social/Physical factor,  $F(1,18) = .013, p = .909$ , partial *eta* squared = .001, Social Assertiveness factor  $F(1,18) = 1.447, p = .245$ , partial *eta* squared = Relaxation/Tension Reduction factor  $F(1,18) = .423, p = .523$ , partial *eta* squared = .063, or the increased Power/Aggression factor  $F(1,18) = .910, p = .353$ , partial *eta* squared = .048 (see Table 9).

## Discussion

The purpose of this research was to pilot a treatment intervention and to compare this intervention with treatment as usual for individuals who were experiencing alcohol-related problems and who were mandated to treatment for alcohol-use disorders. Utilizing videotape as a method to explore insight into drinking behavior, this study attempted to examine whether observing oneself on videotape following a drinking episode, coupled with discussion about the viewing via a motivationally-enhanced interview, would lead to changes in alcohol use. Specifically, it was hypothesized that all participants in this sample would reduce their alcohol consumption, exhibit fewer alcohol-related problem behaviors, endorse less positive expectations of alcohol's effects,

and self-report higher levels of motivation to make changes in alcohol use following treatment. When treatments were compared, it was expected that participants exposed to the experimental video intervention would exhibit significantly higher levels of motivation to change alcohol use behavior, decreases in levels of alcohol consumption and problematic behaviors associated with alcohol use, and decreases in expectations about the positive effects of alcohol when compared with participants receiving treatment as usual.

Results from this study indicated that participants in both groups evidenced statistically significant decreases in alcohol-related problem behaviors and consequences from baseline to the one-month follow-up. That there were significant differences from baseline to follow-up on alcohol-related problems suggests that this finding was particularly robust, given the small sample size and limited power to detect any significant differences for all participants and between groups.

In addition, a non-significant trend was noted between the groups on alcohol-related problem behaviors, with participants in the TAU group exhibiting fewer alcohol-related problem behaviors following treatment than participants who received the experimental video intervention. An additional non-significant trend was found between the two groups on motivation to change alcohol-use behavior as measured by movement along the stages of change on the SCSF, with the treatment as usual group exhibiting some increasing motivation to change behavior by moving forward through stages, while the experimental group expressed decreased motivation by regressing to earlier stage levels.



There was no support for any of the additional hypotheses in the present study. There were no significant differences found within this sample from baseline to follow-up on number of drinks, number of drinking days, or changes in the expectations of alcohol's positive effects. Likewise, no significant differences were noted on movement along the stages of change as measured by the SOCRATES, with most participants in the precontemplation stage at baseline, and remaining in the precontemplation stage following treatment.

Taken together, these findings suggest that self-observation of drinking behavior coupled with a one-session motivationally-styled interview does not lead to changes in alcohol consumption, days drinking, expectations about the positive effects of alcohol on the self, and motivation to change alcohol-use behavior. Overall, these findings are not particularly surprising. One of the greatest limitations of the present study was the small sample size and limited power to detect any meaningful differences within this sample. Because of this it is difficult to state with certainty whether or not the experimental video intervention is more or less effective than treatment as usual and whether or not meaningful differences would have emerged between the treatment groups with a larger sample.

However, findings from this study suggest that overall, participants receiving treatment as usual may have experienced some greater gains following treatment than participants who received the video intervention, at least when considering reductions in alcohol-related problem behaviors and motivation to make changes in alcohol consumption.

It is encouraging that participants in this study self-reported fewer alcohol-related problem behaviors following treatment. However, an unexpected finding was that reductions in problem behaviors did not correspond to decreases in alcohol consumption. Within this sample of participants, there were no changes in alcohol consumption upon completion of treatment. One possible explanation is that the impact of negative consequences (e.g., legal) for individuals mandated to treatment may serve as a strong deterrent against continued involvement in risky situations (e.g., involvement in physical altercations, missing work or school, and neglecting responsibilities) that may lead to additional violations. It is possible that individuals chose to focus their attention on altering the behaviors that might lead to negative consequences, rather than making any changes in their alcohol *use*. This may partially explain why participants self-reported fewer alcohol-related behaviors after completion of treatment, yet exhibited no changes in their actual alcohol consumption. In addition, most of the participants in the present study remained in the precontemplation stage and were therefore not considering making changes in their drinking. This appears to be consistent with some previous research that examined self-motivation to change drinking behaviors among DUI offenders who were mandated to treatment. The majority of the sample reported that they were motivated to change their drinking and driving behavior, but not their actual drinking behavior (Freeman, Liopsis, Schonfeld, Sheehan, Siskind, & Watson, 2005).

The majority of participants in this study were in the precontemplation stage at the outset of the study, and following treatment. Other research that has examined motivation to change within adjudicated samples has shown that this type of population

demonstrates little to no motivation to change substance use behavior (Wieczorek, Callahan, & Morales, 1997).

However, lower levels in motivation to change found for participants in the experimental video intervention on the SFSC suggest that the video intervention may have resulted in some negative effects, at least for two participants in the present study. This would be consistent with some of the previous findings that utilized videotaped playback of drinking episodes to raise awareness about drinking behavior. Participants often dropped out of treatment, returned to heavy drinking, or both following exposure to themselves drinking on videotape (Faia & Shean, 1976; Schaeffer, Sobell, & Mills, 1971).

An encouraging finding from the present study, however, was the low rate of drop-out (only one participant exited the study and discontinued his participation following the baseline assessment) and the high compliance of participants in both conditions with the treatment protocol. Specifically, all participants in the video intervention condition who completed the study did, in fact, return to the second session having videotaped themselves on more than one occasion. The majority had used the video diary on all seven days of the intervention week. It is possible that a key difference between this study and previous investigations was in the self-directed nature of the study, wherein participants chose when and how to conduct the protocol. It is also possible that greater saturation of video recording in society at this time, in comparison to previous studies, reduced participants' anxieties about being videotaped, thus resulting in higher compliance.

Although the potentially negative effects in the present study appear to be minimal in comparison to the findings from earlier studies, it is unclear why there was backward movement along the stages of change for some participants in the video intervention. It is possible that individuals experienced some distress from the intervention that led to changes in motivation levels. A limitation of this study was the lack of a reliable and valid assessment to measure whether participants exposed to the video intervention were experiencing any type of distress following exposure to the video viewing. Other than anecdotal accounts from participants about their experience and verbally checking in with participants prior to, during, and following the video viewing, there was no additional method employed to test for this possibility.

In addition to the quantitative results from this study, several participants' comments and reactions to the intervention may inform future investigations of this nature. Prior to the video viewing, there were some themes that emerged from participants' responses. Some participants observed that they drank less during the week they had the video camera, indicating possible reactivity effects. One participant noted "I didn't want to drink as much." Another mentioned "I drank less than usual, maybe it was subconsciously because of taping myself," and another noted that "I drank less on weekends. I don't know if that was due to not wanting to get another MIP or because of the intervention."

Eight participants noted gaining increased insight into their drinking behavior following videotaping. One participant stated: "It raised my consciousness about the times that I decided to drink," and another mentioned gaining "more awareness, I focused on my drinking more."

One participant noted that he was drinking more during the week when taping himself “my drinking habits have changed. I’ve been drinking more, maybe because my friends came to town.”

After watching the video, participants had some different observations about their drinking behavior, mostly focused on their own mood, physical appearance, verbal expression, and reasons for drinking. For example, participants noted that their pattern of mood changed over time, with two participants stating that their mood was worse after drinking, although they had believed it was going to be better. One of the participants reported that his mood was better on non-drinking days than drinking days.

Six participants mentioned something about their physical appearance. Five of these participants noted not liking their appearance or stated that they did not like the way they looked when they were hung over when filming themselves the following day. Two participants said they were embarrassed. One was embarrassed because she said her friend who was filming her was not taking it seriously and was making jokes. The other said it made him embarrassed that he drinks so much. One participant observed that she looked better than she had thought after drinking. She had expected that she would have been “slurring” her words and “saying something stupid.”

Most participants observed that the reason they drank was related to socializing. One participant believed that he would be a “social outcast” if he didn’t drink. Another said that if her friends did not initiate it she probably wouldn’t drink.

Similarly, when asked about why people chose to drink or not drink and the positive and negative aspects of drinking on non-drinking and drinking days, the largest reason why people drank was because of socializing. Some participants said that they

would “never go out,” “never have any fun,” and “wouldn’t socialize” if they weren’t consuming alcohol. Participants also drank to get in a better mood. One participant observed that he continues to drink with the idea that he will reach the “pinnacle” of joy through drinking. Participants also reported drinking to relieve pressure, anxiety and stress, to relieve boredom, and because it was a weekend or holiday.

The largest reason reported for not drinking was directly related to responsibilities and goals. Two participants reported consuming alcohol when they had responsibilities and both reported feeling guilty and badly about themselves afterward.

Participants reported that when they did not drink, they were much more productive in their daily lives and they took better care of themselves physically. Some participants thought that hangovers were a negative experience and related that to how unproductive they were when hung over.

Spending way too much money was reported by at least four participants as a negative aspect of drinking. One participant noted that she is likely to engage in more risky behaviors when drinking, and that she later regrets making those decisions. Another mentioned arguing with his girlfriend when drinking and expressed concern that it would affect their relationship.

Overall, other than two participants reporting some embarrassment while watching the videotape, participants who were asked for their feedback about the intervention verbally stated that viewing the videotape helped to raise awareness of their own behavior. In general, participants made comments about noticing changes in their mood, consumption levels, days drinking, physical appearance, and verbal expressions while watching the video, and anecdotally reported it was a positive experience. While

this is an encouraging finding, it is possible that these participants were exhibiting a social desirability bias, attempting to minimize any negative effects when discussing the intervention with the principal investigator. Additionally, participants may have been evidencing a positivity bias, presenting themselves favorably and enhancing positive attributes when exposed to self-observation of behaviors that were perceived as potentially negative, threatening, and incongruent with their self-concept.

For example, after viewing the videotape, one participant noted that her physical appearance after drinking was better than she had expected. Another participant who was slurring her words noted that the slurring was not as bad as she had previously thought and that she had believed she would have been more inarticulate. The participant who stated that she was embarrassed by some of her verbal expressions on videotape later mentioned that this did not bother her. This appears to be consistent with a large body of literature demonstrating that when presented with information that is either incongruent with the self-concept or perceived as negative and less than desirable, individuals tend to self-enhance their positive qualities and attribute positive attributes to the self while both discounting negative aspects to the self and attributing these negative attributes to others (e.g., Gosling, John, Craik, & Robins, 1998; Mezulis, Abramson, Hyde, & Hankin, 2004).

An additional limitation in this study was that there may have been a delayed effect for treatment that went undetected due to lack of additional follow-up time periods, or that the treatment effects may have been too brief to result in changes at the one-month follow-up assessment. In this study, participants were only measured at two time points, once prior to the video intervention and at one-month following treatment. While many

studies have demonstrated that brief interventions are effective with as little as one to two sessions, some of the earlier research utilizing video for alcohol use disorders found that behavioral changes were delayed and did not occur until 12 months following treatment (Sobell & Mills, 1971).

Conversely, potential treatment effects may have been confounded by the passage of time. Participants were measured at two time points: prior to the experimental intervention and at one-month following treatment. It is possible that there were treatment effects immediately following the experimental intervention that had waned by the one-month follow-up. In particular, participants may have gained some insight into their behavior as well as some motivation to change behavior immediately following treatment, but promoting insight into negative behavior patterns without providing additional means to alter the behavior may have resulted in decreased motivation and reverting back to negative behavior patterns by the one-month follow-up.

While research has demonstrated that the effectiveness of video playback is largely due to observational learning from oneself, feedback about behavior is not a technique of change by itself. Video playback may be a necessary, but not sufficient, component to provide the necessary conditions for change to occur (Dowrick, 1991). Similarly, increased motivation to change is not sufficient by itself to produce behavior change, although it is considered an important contributor to personal change (Dowrick, 1991). It may be that insight is a necessary precursor to increased motivation and thus motivation may be enhanced by increased insight. Indeed, some recent research has demonstrated that increased insight is directly related to increased motivation to change, with greater levels of insight leading to increased movement along the stages of change



(Kim et al., 2007). Taking this a step further, it may be that maintenance of motivation is dependent upon providing additional resources and coping skills shortly after initial changes in motivation occur (Dowrick, 1991; Schaefer et al., 1971).

In the present study participants reported anecdotally that insight into their drinking behavior increased following the video intervention. Although none of the participants exposed to the video intervention evidenced forward movement along stages of change (and two participants moved backward through stages), it may be that increases in motivation occurred immediately following the intervention but decreased by the one-month follow up. This may have been due to lack of additional treatment sessions to heighten motivation and/or lack of cognitive and behavioral resources to initiate or maintain changes in behavior. It may be necessary to pair the video/motivational intervention with additional motivational sessions or behavioral skills training to increase insight, help maintain and increase motivation, and provide additional coping skills to actually change behavior.

Another potential limitation of the proposed study is that providing only one brief motivationally enhanced session may have been insufficient when considering establishing the rapport and trust that may be necessary in order for participants to openly explore the potentially negative impact of video self-observation on increased self-awareness of drinking behavior. Although studies have demonstrated the beneficial effects of MI in as little as one to two sessions, it may be that additional sessions are needed when paired with the video intervention. However, it may be that having an outside observer watching the videotape may have increased the level of distress and shame for participants. Research has repeatedly demonstrated that individuals make

comparative judgments about self and others, exhibit a positivity bias, and self-enhance their positive attributes when confronted with negative information about themselves.

In addition, the behavior of the principal investigator during the one-session motivational interview may have been biased and unintentionally affected the treatment outcome. Aside from the participant's perspective on establishing adequate rapport after the video viewing, the principal investigator's knowledge of prior research utilizing this type of treatment and the negative impact on participants (e.g., increased distress, increased drinking, and treatment drop-out) may have influenced the way the motivational component of the intervention was conducted. After viewing the video, the principal investigator was sensitive to participant reactions and was hesitant to fully explore the ambivalence and discrepancies that arose due to the sensitive nature of the video content.

In addition to the abovementioned limitations, there were some methodological problems with this study that are worth mentioning. There were some threats to the internal validity of this research. Specifically, the experimental manipulation of the study may have been obvious to participants when they were presented with information about the study. This may have influenced their approach to the treatment when assigned to the experimental video condition. In addition, although graduate students who were blind to the treatment condition administered all assessment measures, the principal investigator conducted all the individual sessions for the video intervention group, potentially resulting in experimenter bias. It is possible that there were testing effects by administering the same pre and post test measurements. Participants may have started

thinking about their drinking behavior differently after completing the pretest measurements, and this may have influenced their responses on the follow-up measures.

Although the findings from the present study do not support the use of video as an intervention for individuals with alcohol use disorders, it may be worthwhile for future research to continue to explore alternative ways to incorporate self-observation of drinking behavior in the treatment of alcohol use disorders. Although previous research in this area found that the impact of video self-observation was aversive for participants and resulted in increased drinking and dropping out of treatment, the findings from the present research did not result in such unfavorable outcomes. There was no evidence of increased alcohol consumption for either of the groups by the end of treatment, and although one participant in the experimental video condition dropped out of the study, most remaining participants responded positively to the video viewing, reporting anecdotally that viewing the video helped to raise consciousness about their own drinking behavior.

Future research may want to consider whether the insight gained from the video viewing is transient or remains stable over time. In addition, comparing whether the level of insight gained differs for individuals who are exposed to themselves on video versus more traditional methods of self-monitoring (e.g., paper and pencil records of daily alcohol use) may provide additional information about levels of insight and whether different levels are important when considering making changes in alcohol use. Additionally, researchers may want to further explore whether levels of insight contribute to motivation to change and increased movement along the stages of change. Researchers

may want to explore whether motivation to change plays a mediating role between the insight gleaned from the video viewing and actual behavior change.

In addition, future researchers may want to consider incorporating a modified form of the video intervention into existing brief treatment models that utilize motivational interviewing. For example, individuals could be offered the option of videotaping and viewing themselves on their own without the treatment provider, and later discuss their thoughts about the viewing during a motivational session. This may help to attenuate any potential embarrassment or distress that may arise when viewing the video with an outside observer.

Although this study found little support for the video intervention, it is possible that adjustments to the use of video as an intervention tool may further advance our knowledge about the components of treatment that lead to changes in alcohol use when attempting to treat individuals with alcohol-use disorders.

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Table 1

## Sample Characteristics for all Participants and by Treatment Group

	Total ( <i>n</i> = 21)	Video ( <i>n</i> = 10)	TAU ( <i>n</i> = 11)
Gender			
Female	48% (10)	30% (3)	64% (7)
Male	52% (11)	70% (7)	36% (4)
Mean age (SD)	24.33 (8.33)	22.10 (3.81)	26.36(10.78)
Treatment Agency			
WMAS	38% (8)	30% (3)	45% (5)
SOS	62% (13)	70% (7)	55% (6)
Ethnicity			
White/European American	85% (18)	90% (9)	82% (9)
American Indian/ Native American	5% (1)		9% (1)
American Indian/Native American/Hispanic/ Latino/a	5% (1)		9% (1)
Asian/Asian American	5% (1)	10% (1)	
Mean Years education (SD)	12.95 (1.28)	13.10 (1.48)	12.80 (1.28)
Mean income (SD)	11,667 (12,159)	10,200 (7,208)	13,000(15,646)
Family History of Alcohol problems			
Yes	76% (16)	60% (6)	91% (10)
No	24% (5)	40% (4)	9% (1)
Alcohol Treatment History			
Yes	48% (10)	30% (3)	64% (7)
No	52% (11)	70% (7)	36% (4)
Number of Treatments ( <i>n</i> = 9)			
Once previously	10% (2)		22% (2)
Twice previously	33% (7)	11% (1)	67% (6)
Type of Alcohol Treatment ( <i>n</i> = 7)			
Inpatient	5% (1)		14% (1)
Outpatient (excluding AA)	10% (2)		29% (2)
Detox	5% (1)		14% (1)
Outpatient Group	14% (3)	14% (1)	29% (2)

Table 1 continued

Sample Characteristics for all Participants and by Treatment Group

	Total ( <i>n</i> = 21)	Video ( <i>n</i> = 10)	TAU ( <i>n</i> = 11)
Attended AA			
Yes	24% (5)	10% (1)	36% (4)
No	76% (16)	90% (9)	64% (7)
Drug Treatment History ( <i>n</i> = 18)			
Yes	17% (3)		17% (3)
No	83% (15)	39% (7)	44% (8)
Number of Treatments ( <i>n</i> = 2)			
Once previously	50% (1)		50% (1)
Three times previously	50% (1)		50% (1)
Mean Number of Days			
Alcohol and Drug Use (past 30 days)			
Alcohol	9.14 (SD = 6.84; <i>n</i> = 17)		
Alcohol (to intoxication)	5.19 (SD = 4.52; <i>n</i> = 14)		
Cannabis	6.10 (SD = 10.98; <i>n</i> = 9)		
Number of Days or Range of Use (past 30 days)			
Hallucinogens	1-2 days (2)		
Cocaine	4 days (1)		
Methamphetamine	1 day (1)		
Barbiturates	1 day (1)		
Sedatives/tranquilizers	1-5 days (2)		
Inhalants	4 days (1)		
Mean Number of Years			
Alcohol and Drug Use (3 or more times weekly)			
Alcohol	2.17 (SD = 2.82; <i>n</i> = 15)		
Alcohol (to intoxication)	1.29 (SD = 1.76; <i>n</i> = 10)		
Cannabis	.904 (SD = 2.10; <i>n</i> = 6)		
Number of Years Using (3 or more times weekly)			
Opiates/Analgesics	3 years (1)		
Sedatives/tranquilizers	2 years (1)		



Table 2

Mean Differences and *t* tests: Baseline and One-Month Follow-Up Differences for all Participants: Self-Reported Alcohol Quantity/Frequency within the Past 30 days, Alcohol-Related Problem Behaviors, and Alcohol Expectancies

	Baseline	Follow-Up			
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>df</i>	<i>t</i>	<i>p</i>
Number of Drinks (TLFB)	58.86 (65.86)	56.43 (57.82)	20	.431	.671
Number of Drinking Days (TLFB)	8.67 (6.34)	8.48 (7.32)	20	.293	.772
Problem Behaviors (RAPI)	56.24 (22.10)	42.71 (18.76)	20	2.84	.010
AUDIT	14.80 (6.97)	12.46 (7.12)	20	2.55	.020
Total Score (AEQ)	67.90 (24.19)	67.19 (24.63)	20	.202	.842
Global Positive Changes (AEQ)	12.33 (7.05)	11.67 (6.44)	20	.695	.495
Sexual Experience/Arousal (AEQ)	2.38 (1.75)	2.48 (2.00)	20	-.257	.800
Physical/Social Pleasure (AEQ)	7.24 (1.79)	7.38 (2.06)	20	-.568	.576
Social assertiveness (AEQ)	8.10 (3.05)	7.81 (3.28)	20	.709	.487
Relaxation/Tension Reduction (AEQ)	5.76 (2.30)	5.67 (2.63)	20	.244	.809
Arousal/Aggression (AEQ)	2.95 (.973)	2.62 (1.47)	20	1.323	.201

Note. Higher scores on AEQ indicate increased positive alcohol expectancies. Higher scores on RAPI and AUDIT (>8.00 on AUDIT) indicate increased alcohol-related problem behaviors.

Table 3

Mean Differences and *t* tests: Baseline and One-Month Follow-Up Differences for all Participants on Stages of Change Factors (SOCRATES)

	Baseline	Follow-Up			
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>df</i>	<i>t</i>	<i>p</i>
Ambivalence (SOCRATES)	9.29 (4.24)	9.29 (4.84)	20	<.001	1.00
Recognition (SOCRATES)	15.33 (7.39)	15.10 (7.70)	20	.331	.744
Taking Steps (SOCRATES)	25.10 (7.21)	25.57 (8.26)	20	-.371	.714

Note. Score ranges for Ambivalence: High = 17-20, Medium = 14-16, Low = 4-13; score ranges for Recognition: High = 34-35, Medium = 31-33, Low = 7-30; score ranges for Taking Steps: High = 36-40, Medium = 31-36, Low = 8-30.

Lower scores on Ambivalence combined with Lower scores on Recognition correspond to no acknowledgment of any problems with drinking and no desire to change (precontemplation). Higher scores on Taking Steps indicate making changes in drinking behavior.

Table 4

<u>Stage of Change Movement from Baseline to Follow-up for all Participants on the SFSC</u>					
<u>Stages of Change</u>	<i>N</i>	<i>Mean Ranks</i>	<i>Sum of Ranks</i>	<i>z</i>	<i>p</i>
Follow-up - Baseline					
Negative Ranks	2	2.5	5.0		
Positive Ranks	1	1.0	1.0	-1.09	.276
Ties	17				
Total	20				

Note. One participant in the video intervention group moved backward two stages from action to contemplation, and another moved from preparation to precontemplation. One participant in the TAU group moved forward one stage, from preparation to action.

Table 5

One-Way ANCOVAs with Baseline Scores entered as Covariates on Stages of Change (SOCRATES)

	<u>Video (n=10)</u>			<u>TAU (n=11)</u>			<u>ANCOVA</u>	
	Baseline	Follow-up		Baseline	Follow-up		<i>F</i>	<i>p</i>
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>Adjusted</i> <i>Mean</i>	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>Adjusted</i> <i>Mean</i>		
Ambivalence (SOCRATES)	10.00 (5.14)	10.40 (4.77)	9.69	8.64 (3.35)	8.27 (4.90)	8.92	.560 (1,18)	.464
Recognition (SOCRATES)	15.80 (7.69)	15.00 (7.20)	14.56	14.90 (7.46)	15.18 (8.48)	15.58	.473 (1,18)	.500
Taking Steps (SOCRATES)	24.90 (6.08)	27.60 (4.58)	27.76	25.27 (8.40)	23.73 (10.47)	23.58	2.91 (1,18)	.105

Note. Score ranges for Ambivalence: High = 17-20, Medium = 14-16, Low = 4-13; score ranges for Recognition: High = 34-35, Medium = 31-33, Low = 7-30; score ranges for Taking Steps: High = 36-40, Medium = 31-36, Low = 8-30.

Lower scores on Ambivalence combined with Lower scores on Recognition correspond to no acknowledgment of any problems with drinking and no desire to change (precontemplation). Higher scores on Taking Steps indicate that participants are making changes in drinking behavior.

Table 6

Differences between the Experimental Video and TAU groups on Ranked Scores of Movement through Stages of Change (SCSF)

	<i>N</i>	<i>M Rank</i>	<i>U</i>
Experimental Video Group	10	9.50	40*
Treatment as Usual Group	11	12.36	

\* $p = .083$ .

Table 7

One-Way ANCOVAs with Baseline Scores as Covariates on Quantity and Frequency of Alcohol Consumption for the past 30 Days (TLFB)

	<u>Video (n =10)</u>			<u>TAU (n =11)</u>			<u>ANCOVA</u>	
	Baseline <i>M</i> ( <i>SD</i> )	Follow-up <i>M</i> ( <i>SD</i> )	<i>Adjusted</i> <i>Means</i>	Baseline <i>M</i> ( <i>SD</i> )	Follow-up <i>M</i> ( <i>SD</i> )	<i>Adjusted</i> <i>Means</i>	<i>F</i> ( <i>df</i> )	<i>p</i>
TLFB Drinks	72.60 (79.63)	68.60 (64.67)	57.54	46.36 (51.06)	45.36 (51.37)	55.42	.040 (1,18)	.844
TLFB Days	10.50 (5.72)	10.00 (7.70)	8.03	7.00 (6.66)	7.09 (7.02)	8.89	.374 (1,18)	.549

Note. Scores correspond to number of drinks consumed and number of drinking days over 30 days.

Table 8

One-Way ANCOVAs with Baseline Scores as Covariates on Alcohol-Related Problem Behaviors as measured by the RAPI and AUDIT

	<u>Video (n=10)</u>			<u>TAU (n=11)</u>			<u>ANCOVA</u>	
	Baseline <i>M</i> ( <i>SD</i> )	Follow-up <i>M</i> ( <i>SD</i> )	<i>Adjusted Means</i>	Baseline <i>M</i> ( <i>SD</i> )	Follow-up <i>M</i> ( <i>SD</i> )	<i>Adjusted Means</i>	<i>F</i> ( <i>df</i> )	<i>p</i>
RAPI	53.40 (20.80)	47.70 (22.53)	48.86	58.81 (23.93)	38.18 (14.13)	37.13	2.56 (1,18)	.127
AUDIT	16.80 ( 7.28)	14.90 (7.02)	13.27	12.80 (6.08)	10.02 (6.69)	11.65	.717 (1,17)	.409

Note. Higher scores on RAPI and AUDIT indicate increased alcohol-related problem behaviors.

Table 9

One-Way ANCOVAs with Baseline Scores as Covariates on Alcohol Expectancies (Total Score and Six Factors of AEQ)

	<u>Video (n =10)</u>		Adjusted <i>Means</i>	<u>TAU (n =11)</u>		<i>Adjusted Means</i>	<u>ANCOVA</u>	
	Baseline	Follow-up		Baseline	Follow-up		<i>F</i> ( <i>df</i> )	<i>p</i>
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )		<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )			
Total Score (AEQ)	68.90 (23.25)	72.70 (22.31)	71.92	67.00 (25.96)	62.18 (26.20)	62.89	1.772 (1,18)	.200
Global Positive (AEQ)	11.90 (7.13)	12.10 (6.69)	12.42	12.73 (7.31)	11.27 (6.51)	10.99	.641 (1,18)	.434
Sexual Experience (AEQ)	2.80 (2.10)	3.00 (1.89)	2.73	2.00 (1.34)	2.00 (2.05)	2.25	.419 (1,18)	.526
Social/Physical (AEQ)	7.50 (1.18)	7.60 (1.43)	7.35	7.00 (2.23)	7.18 (2.56)	7.41	.013 (1,18)	.909
Social Assertiveness (AEQ)	8.30 (2.83)	8.50 (2.37)	8.32	7.90 (3.36)	7.18 (3.95)	7.35	1.447 (1,18)	.245
Relaxation/Tension (AEQ)	5.60 (1.84)	5.80 (2.62)	5.94	5.91 (2.74)	5.55 (2.77)	5.42	.423 (1,18)	.523
Power/Aggression (AEQ)	3.20 (.919)	3.10 (1.45)	2.89	2.73 (1.01)	2.18 (1.40)	2.38	.910 (1,18)	.353

Note. Higher mean scores indicate increased positive alcohol expectancies.



Appendix A



Hello,

We are writing to give you some information about a research project we are conducting at the Self Over Substance (SOS) program. We are contacting all students who will be involved in Phase II of the SOS program to see if you would like to participate. We are interested in trying a new intervention for people who are referred to treatment for substance use. If you participate in this study, you will be randomly assigned to one of two conditions. You will either complete the program exactly as planned, or in addition to Phase II, you will be asked to answer some questions every day over a one-week period, recording your responses into a video camera that we will provide. In both conditions, you will be asked to fill out some paper and pencil measures and answer some questions about alcohol use.

If you are interested in participating, we would like **to offer you either monetary compensation or Psychology 100 Experimental Research Credits** for your time. If you choose monetary compensation **we will provide you with \$10 at the initial meeting when you fill out some paper and pencil measures and another \$15 when you return in four weeks for a follow-up visit to complete the paper and pencil measures again.**

If you choose to receive experimental research credits **we will provide you with 3 credits at the initial meeting when you fill out some paper and pencil measures and another 5 credits when you return in one month for a follow-up visit to complete the paper and pencil measures again.** Each of these meetings should take approximately one hour.

This study is completely voluntary, and will not affect your participation or completion of the SOS program requirements in any way. Any information you provide to us will remain completely confidential, and you can choose to withdraw from the study at any time without consequences to you.

If this is something you think you might be interested in, or if you would like some additional information, please feel free to contact the study coordinator, Wendy Rothman at (406) \_\_\_\_\_.

Thank you.  
Sincerely,

Mike Frost M.A., LCPC, LAC  
Self Over Substance Coordinator

## Appendix B

### Participant Recruitment Instructions for SOS:

Hi, I'm Wendy Rothman, and I'm a graduate student at the University of Montana working on my dissertation in Clinical Psychology. I'm conducting research project involving learning more about alcohol use and new forms of treatment interventions. As part of your involvement in the SOS program, we are asking if you would like to participate in a research project. If you agree to participate you will be assigned to either complete the SOS program as planned, or you will be asked to complete SOS and answer some questions every day over a one-week period, recording your responses into a video camera that we will provide. In addition, everyone will be asked to meet with a trained research assistant on two occasions to fill out some alcohol-related questionnaires. If this is something that you might be interested in we would like to thank you by compensating you for your time. We will provide you with either monetary compensation or Psychology 100 Experimental Research Credits for your time, \$25 or 8 experimental research credits.

If you decide to participate in this study, the information you provide will be kept completely confidential. We do require that you sign your name to a consent form, and that consent form will be kept in a locked file cabinet separate from all other data. There will be no identifying information on any of the paper and pencil measures you fill out; instead, you will be assigned a number and only the number will be associated with the data. Pertaining to the videotapes, all videos will be placed in a locked filing cabinet and only the principal investigator and the faculty advisor will have access to this information.

Participation in this project is completely voluntary, and you can choose to withdraw from the study at any time without prejudice or consequences. In addition, withdrawing from the study in no way affects your participation and completion of the SOS program; however, you will still be required to complete the SOS program as outlined by your initial referral.

I'm going to hand out some information about the study and a phone number for you to call if you or think that this is something you might be interested in. I am also handing out a sign-up sheet for you to provide your contact information if you wish. Providing your contact information does not commit you to taking part in the study. I will contact you to provide additional information and answer any questions you might have. At that time you can decide whether you would like to participate in the study. Please feel free to contact me with any additional questions you may have about the study. Again, participation in this study assures that the information you provide will be confidential.

## Appendix C

### Participant Recruitment Instructions for Western Montana Addiction Services (WMAS):

Hi, I'm Wendy Rothman, and I'm a graduate student at the University of Montana working on my dissertation in Clinical Psychology. I'm conducting research project involving learning more about alcohol use and new forms of treatment interventions, and I'm here to talk to you today to see if you might be interested in participating in this research project. If you agree to participate you will be assigned to either complete the ACT program as planned, or you will be asked to complete ACT and answer some questions every day over a one-week period, recording your responses into a video camera that we will provide. Then you will meet with the principal investigator to view the tape and answer some questions about alcohol use. In addition, everyone will be asked to meet with a trained research assistant on two occasions to complete some alcohol-related questionnaires.

If this is something that you might be interested in we would like to thank you by compensating you for your time. We will provide you with \$50 total, \$25 at the initial meeting when you fill out some paper and pencil measures, and another \$30 when you return to fill out additional paper and pencil measures at a follow-up visit, one month after completion of the ACT program.

If you decide to participate in this study, the information you provide will be kept completely confidential. We do require that you sign your name to a consent form, and that consent form will be kept in a locked file cabinet separate from all other data. There will be no identifying information on any of the paper and pencil measures you fill out; instead, you will be assigned a number and only the number will be associated with the data. Pertaining to the videotapes, all videos will be placed in a locked filing cabinet and only the principal investigator and the faculty advisor will have access to this information.

Participation in this project is completely voluntary, and you can choose to withdraw from the study at any time without any consequences to you. In addition, withdrawing from the study in no way affects your participation and completion of the ACT program; however, you will still be required to complete the ACT program as outlined by your initial referral.

I'm going to hand out some information about the study and a phone number for you to call if you or think that this is something you might be interested in. I am also handing out a sign-up sheet for you to provide your contact information if you wish. Providing your contact information does not commit you to taking part in the study. I will contact you to provide additional information and answer any questions you might have. At that time you can decide whether you would like to participate in the study. Please feel free to contact me with any additional questions you may have about the study. Again, participation in this study assures that the information you provide will be confidential.

Appendix D



Hello,

I'm conducting a research project as part of my dissertation and am looking to recruit participants from the ACT program. I am interested in trying a new intervention for people who are referred to treatment for substance use. If you participate in this study, you will be randomly assigned to one of two conditions. You will be asked to either fill out some questionnaires related to alcohol use, or in addition to the questionnaires, be asked to answer some brief questions every day over a one-week period, recording your responses into a video camera that I will provide. In either condition you will still be required to complete the ACT program as planned.

If you are interested in participating, we will offer monetary compensation for your time. **I will provide you with \$20 at the initial meeting when you fill out some questionnaires, and another \$30 when you return in one month for a follow-up visit to complete the questionnaires again.** Each of these meetings takes approximately one hour or less.

This study is completely voluntary, and will not affect your participation or completion of the ACT program requirements in any way. Any information you provide to us will remain completely confidential, and you can choose to withdraw from the study at any time without prejudice or consequences to you.

If this is something you think you might be interested in, or if you would like some additional information, please feel free to contact me at (406) \_\_\_\_\_.

Thank you.

Sincerely,

Wendy Rothman

## AUDIT

**Please circle the answer that is correct for you.**

**1. How often do you have a drink containing alcohol? (circle the best response)**

- 1) NEVER
- 2) MONTHLY OR LESS
- 3) TWO TO FOUR TIMES A MONTH
- 4) TWO TO THREE TIMES A WEEK
- 5) FOUR OR MORE TIMES A WEEK

**NOTE: For answering these questions, one "drink" is equal to 10 ounces of beer, or 4 ounces of wine, or 1 ounce of liquor**

**2. How many drinks containing alcohol do you have on a typical day when you are drinking?**

- 1) 1 OR 2
- 2) 2 OR 4
- 3) 5 OR 6
- 4) 7 TO 9
- 5) 10 OR MORE

**3. How often do you have six or more drinks on one occasion?**

- 1) NEVER
- 2) LESS THAN MONTHLY
- 3) MONTHLY
- 4) WEEKLY
- 5) DAILY OR ALMOST DAILY

**4. How often during the last year have you found that you were not able to stop drinking once you had started?**

- 1) NEVER
- 2) LESS THAN MONTHLY
- 3) MONTHLY
- 4) WEEKLY
- 5) DAILY OR ALMOST DAILY

**5. How often during the last year have you failed to do what was normally expected from you because of drinking?**

- 1) NEVER
- 2) LESS THAN MONTHLY
- 3) MONTHLY
- 4) WEEKLY
- 5) DAILY OR ALMOST DAILY

**6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?**

- 1) NEVER
- 2) LESS THAN MONTHLY
- 3) MONTHLY
- 4) WEEKLY
- 5) DAILY OR ALMOST DAILY

**7. How often during the last year have you had a feeling of guilt or remorse after drinking?**

- 1) NEVER
- 2) LESS THAN MONTHLY
- 3) MONTHLY
- 4) WEEKLY
- 5) DAILY OR ALMOST DAILY

**8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?**

- 1) NEVER
- 2) LESS THAN MONTHLY
- 3) MONTHLY
- 4) WEEKLY
- 5) DAILY OR ALMOST DAILY

**9. Have you or someone else been injured as a result of your drinking?**

- 1) NEVER
- 2) YES, BUT NOT IN THE LAST YEAR
- 3) YES, DURING THE LAST YEAR

**10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?**

- 1) NEVER
- 2) YES, BUT NOT IN THE LAST YEAR
- 3) YES, DURING THE LAST YEAR

Appendix F

RAPI

**Instructions:** For each of the following items, rate approximately how often it has occurred while you were drinking or because of your drinking.

---

1)	Not able to do your work/homework or study for a test....				
1	2	3	4	5	
NEVER					MORE THAN 10 TIMES
2)	Got into fights, acted bad or did mean things....				
1	2	3	4	5	
NEVER					MORE THAN 10 TIMES
3)	Missed out on other things because you spent too much money on alcohol....				
1	2	3	4	5	
NEVER					MORE THAN 10 TIMES
4)	Went to work or school high or drunk....				
1	2	3	4	5	
NEVER					MORE THAN 10 TIMES
5)	Caused shame or embarrassment to someone....				
1	2	3	4	5	
NEVER					MORE THAN 10 TIMES
6)	Neglected your responsibilities....				
1	2	3	4	5	
NEVER					MORE THAN 10 TIMES

7) Relatives avoided you....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

8) Felt that you needed more alcohol than you used to use in order to get the same effect....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

9) Tried to control your drinking by trying to drink only at certain times of the day or certain places....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

10) Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

11) Noticed a change in your personality....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

12) Felt that you had a problem with alcohol....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES



- 13) Missed a day (or part of a day) of school or work....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |
- 14) Tried to cut down or quit drinking....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |
- 15) Suddenly found yourself in a place that you could not remember getting to....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |
- 16) Passed out or fainted suddenly....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |
- 17) Had a fight, argument, or bad feelings with a friend....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |
- 18) Had a fight, argument, or bad feelings with a family member....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |
- 19) Kept drinking when you promised yourself not to....
- |       |   |   |   |                       |
|-------|---|---|---|-----------------------|
| 1     | 2 | 3 | 4 | 5                     |
| NEVER |   |   |   | MORE THAN<br>10 TIMES |

20) Felt like you were going crazy....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

21) Had a bad time....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

22) Felt physically or physiologically dependent on alcohol....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

23) Was told by a friend or a neighbor to stop or cut down on drinking....

1	2	3	4	5
NEVER				MORE THAN 10 TIMES

Appendix G

Timeline Follow Back (30 Day)

Substance Use Codes:

Alcohol

B = beer

L = hard liquor (vodka, whiskey, rum)

W = wine (natural)

WF = wine (fortified)

LI = liqueur

BO = bottle

MD = mixed drink

Total number of drinks: \_\_\_\_\_

Total number of drinking days: \_\_\_\_\_

\_\_\_\_\_ TO \_\_\_\_\_

Sun	Mon	Tues	Wed	Thurs	Fri	Sat

## Appendix H

### Standard Drink Card

1 Standard Drink (13.6 g absolute alcohol) is equal to:

<b>Beer</b> (5%):	12 oz.	Standard bottle or can
<b>Lite Beer</b> (3 ½ - 4%):	18 oz.	1 ½ cans or bottles
<b>Wine</b> (10 – 13%):	5 oz. (white, red, Chablis, chardonnay, champagne)	
<b>Fortified Wine</b> (18%):	3 oz (sherry, Manishevitz, port, sweet wines)	
<b>Hard Liquor</b> (80 proof):	1 – 1 ½ oz.	
<b>Nyquil</b> (25%)	2 ½ oz.	
<b>Listerine</b> (27%)	2 ½ oz.	

#### **Beer:**

1 can regular (12 oz) = 1 standard drink  
1 ½ cans Lite (18oz) = 1 standard drink  
1 can Lite (12 oz) = 2/3 of a standard drink

6-pack regular = 6 standard drinks  
6-pack Lite = 4 standard drinks

Case (24 regular cans) = 24 standard drinks  
Case (24 Lite cans) = 16 standard drinks

#### **Wine:**

1 bottle (25 oz) = 5 standard drinks  
1 jug (2 bottles / 50 oz) = 10 standard drinks  
1 bottle fortified (25 oz) = 8 standard drinks

#### **Hard Liquor:**

1 pint (16 oz) = 11 standard drinks  
1 bottle (a fifth / 25 oz / 750 ml) = 17 standard drinks (a “fifth” means a fifth of a gallon)  
1 quart (32 oz) = 22 standard drinks  
1 bottle (40 oz / 1.14 L) = 27 standard drinks  
Nip (airplane bottles / 50 ml / 1 – 1 ¼ oz) = 1 standard drink

#### **Other:**

Nyquil: 1 large bottle (14 oz) = 6 standard drinks  
Listerine: 1 large bottle (18 oz) = 7 standard drinks

Appendix I

**Personal Drinking Questionnaire  
(SOCRATES 8A)**

**INSTRUCTIONS:** Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drinking. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

**1. I really want to make changes in my drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**2. Sometimes I wonder if I am an alcoholic.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**3. If I don't change my drinking soon, my problems are going to get worse.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**4. I have already started making some changes in my drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**5. I was drinking too much at one time, but I've managed to change my drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**6. Sometimes I wonder if my drinking is hurting other people.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**7. I am a problem drinker.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**8. I'm not just thinking about changing my drinking, I'm already doing something about it.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**9. I have already changed my drinking, and I am looking for ways to keep from slipping back to my old pattern.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**10. I have serious problems with drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**11. Sometimes I wonder if I am in control of my drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**12. My drinking is causing a lot of harm.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**13. I am actively doing things now to cut down or stop drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**14. I want help to keep from going back to the drinking problems that I had before.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**15. I know that I have a drinking problem.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**16. There are times when I wonder if I drink too much.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**17. I am an alcoholic.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**18. I am working hard to change my drinking.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**19. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.**

Strongly disagree	Disagree	Undecided/Unsure	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

## Appendix J

### SFSC

Males (females use 4 or more in a row)

In the last month have you had 5 or more drinks in a row?

1. Yes, and I do not intend to stop drinking 5 or more drinks in a row.
2. Yes, but I intend to stop drinking 5 or more drinks in a row during the next 6 months.
3. Yes, but I intend to stop drinking 5 or more drinks in a row during in the next 30 days.
4. No, but I have had 5 or more drinks in a row in the past 6 months.
5. No, and I have not had 5 or more drinks in a row in the past 6 months.
6. No, I have never had 5 or more drinks in a row.



Appendix K

**ALCOHOL EXPECTANCY QUESTIONNAIRE - III  
(ADULT)**

The following pages contain statements about the effects of alcohol. Read each statement carefully and respond according to your own personal thoughts, feelings and beliefs about alcohol now. We are interested in what you think about alcohol, regardless of what other people might think.

If you think that the statement is true, or mostly true, or true some of the time, then circle "Agree" on the answer sheet. If you think the statement is false, or mostly false, then circle "Disagree" on the answer sheet. When the statements refer to drinking alcohol, you may think in terms of drinking any alcoholic beverage, such as beer, wine, whiskey, liquor, rum, scotch, vodka, gin, or various alcoholic mixed drinks. Whether or not you have had actual drinking experiences yourself, you are to answer in terms of your beliefs about alcohol. It is important that you respond to every question.

Begin answering on Question 1. Please answer every item on the answer sheet. PLEASE BE HONEST. REMEMBER, YOUR ANSWERS ARE CONFIDENTIAL.

ANY QUESTIONS? Please ask the examiner.

GO TO THE NEXT PAGE .....

**RESPOND TO THESE ITEMS ACCORDING TO WHAT YOU PERSONALLY BELIEVE TO BE TRUE ABOUT ALCOHOL**

**(Circle Agree or Disagree according to your beliefs)**

- |       |          |     |  |
|-------|----------|-----|--|
| Agree | Disagree | 1.  | Alcohol can transform my personality.  |
| Agree | Disagree | 2.  | Drinking helps me feel whatever way I want to feel.                                |
| Agree | Disagree | 3.  | Some alcohol has a pleasant, cleansing, tingly taste.                              |
| Agree | Disagree | 4.  | Alcohol makes me feel happy.   |
| Agree | Disagree | 5.  | Drinking adds a certain warmth to social occasions.                                |
| Agree | Disagree | 6.  | Sweet, mixed drinks taste good.  |
| Agree | Disagree | 7.  | When I am drinking, it is easier to open up and express my feelings.               |
| Agree | Disagree | 8.  | Time passes quickly when I am drinking.  |
| Agree | Disagree | 9.  | When they drink, women become more sexually relaxed.                               |
| Agree | Disagree | 10. | Drinking makes me feel flushed.  |
| Agree | Disagree | 11. | I feel powerful when I drink, as if I can really influence others to do as I want. |
| Agree | Disagree | 12. | Drinking increases male aggressiveness.  |

**ANSWER ACCORDING TO YOUR CURRENT PERSONAL BELIEFS**

- |       |          |     |  |
|-------|----------|-----|--|
| Agree | Disagree | 13. | Alcohol lets my fantasies flow more easily.                                      |
| Agree | Disagree | 14. | Drinking gives me more confidence in myself.                                     |
| Agree | Disagree | 15. | Drinking makes me feel good.   |
| Agree | Disagree | 16. | I feel more creative after I have been drinking.                                 |
| Agree | Disagree | 17. | Having a few drinks is a nice way to celebrate special occasions.                |
| Agree | Disagree | 18. | I can discuss or argue a point more forcefully after I have had a few drinks.    |
| Agree | Disagree | 19. | When I am drinking I feel freer to be myself and to do whatever I want.          |
| Agree | Disagree | 20. | Drinking makes it easier to concentrate on the good feelings I have at the time. |
| Agree | Disagree | 21. | Alcohol allows me to be more assertive.  |
| Agree | Disagree | 22. | When I feel "high" from drinking, everything seems to feel better.               |
| Agree | Disagree | 23. | A drink or two makes the humorous side of me come out.                           |

GO TO THE NEXT PAGE .....

**ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW**

- |       |          |     |   |
|-------|----------|-----|---|
| Agree | Disagree | 24. | If I am nervous about having sex, alcohol makes me feel better.   |
| Agree | Disagree | 25. | Drinking relieves boredom.  |
| Agree | Disagree | 26. | I find that conversing with members of the Opposite sex is easier for me after I have had A few drinks. |
| Agree | Disagree | 27. | After a few drinks, I feel less sexually inhibited.   |
| Agree | Disagree | 28. | Drinking is pleasurable because it is enjoyable to join in with people who are enjoying themselves.     |
| Agree | Disagree | 29. | I like the taste of some alcoholic beverages.   |
| Agree | Disagree | 30. | If I am feeling restricted in any way, a few drinks make me feel better.                                |
| Agree | Disagree | 31. | Men are friendlier when they drink.   |
| Agree | Disagree | 32. | It is easier for me to meet new people if I've been drinking.   |
| Agree | Disagree | 33. | After a few drinks, it is easier to pick a fight.   |
| Agree | Disagree | 34. | Alcohol can eliminate feelings of inferiority.  |

**ANSWER ACCORDING TO YOUR CURRENT PERSONAL BELIEFS**

- |       |          |     |   |
|-------|----------|-----|---|
| Agree | Disagree | 35. | Alcohol makes women more sensuous.  |
| Agree | Disagree | 36. | If I have a couple of drinks, it is easier to express my feelings.                          |
| Agree | Disagree | 37. | I feel less bothered by physical ills after a few drinks.                                   |
| Agree | Disagree | 38. | Alcohol makes me need less attention from others than I usually do.                         |
| Agree | Disagree | 39. | Alcohol makes me more outspoken or opinionated  |
| Agree | Disagree | 40. | After a few drinks, I feel more self-reliant than usual.                                    |
| Agree | Disagree | 41. | After a few drinks, I don't worry as much about what other people think of me.              |
| Agree | Disagree | 42. | When drinking, I do not consider myself totally accountable or responsible for my behavior. |
| Agree | Disagree | 43. | Alcohol enables me to have a better time at parties.  |
| Agree | Disagree | 44. | Anything which requires a relaxed style can be facilitated by alcohol.                      |

GO TO THE NEXT PAGE .....

**ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW**

- |                  |          |     |  |
|------------------|----------|-----|--|
| Agree            | Disagree | 45. | Drinking makes the future seem brighter.                                     |
| Agree            | Disagree | 46. | I am not as tense if I am drinking.  |
| Agree<br>drinks. | Disagree | 47. | I often feel sexier after I have had a couple of                             |
| Agree            | Disagree | 48. | Having a few drinks helps me relax in a social<br>situation.                 |
| Agree            | Disagree | 49. | I drink when I am feeling mad.   |
| Agree            | Disagree | 50. | Drinking alone or with one other person<br>makes me feel calm and serene.    |
| Agree            | Disagree | 51. | After a few drinks, I feel brave and more<br>capable of fighting.            |
| Agree            | Disagree | 52. | Drinking can make me more satisfied with<br>myself.                          |
| Agree            | Disagree | 53. | There is more camaraderie in a group of<br>people who have been drinking.    |
| Agree            | Disagree | 54. | My feelings of isolation and alienation<br>decrease when I drink.            |
| Agree            | Disagree | 55. | A few drinks makes me feel less in touch with<br>what is going on around me. |

**ANSWER ACCORDING TO WHAT YOU BELIEVE NOW**

- |       |          |     |   |
|-------|----------|-----|---|
| Agree | Disagree | 56. | Alcohol makes me more tolerant of people I<br>do not enjoy.       |
| Agree | Disagree | 57. | Alcohol helps me sleep better.                                    |
| Agree | Disagree | 58. | Drinking increases female aggressiveness.                         |
| Agree | Disagree | 59. | I am a better lover after a few drinks.                           |
| Agree | Disagree | 60. | Women talk more after they have had a few<br>drinks.              |
| Agree | Disagree | 61. | Alcohol decreases muscular tension.                               |
| Agree | Disagree | 62. | Alcohol makes me worry less.                                      |
| Agree | Disagree | 63. | A few drinks make it easier to talk to people.                    |
| Agree | Disagree | 64. | After a few drinks I am usually in a better<br>mood.              |
| Agree | Disagree | 65. | Alcohol seems like magic.   |
| Agree | Disagree | 66. | Women can have orgasms more easily if they<br>have been drinking. |
| Agree | Disagree | 67. | At times, drinking is like permission to forget<br>problems.      |
| Agree | Disagree | 68. | Drinking helps me get out of a depressed<br>mood.                 |

GO TO THE NEXT PAGE .....

**ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW**

- |       |          |     |   |
|-------|----------|-----|---|
| Agree | Disagree | 69. | After I have had a couple of drinks, I feel I am more of a caring, sharing person.          |
| Agree | Disagree | 70. | Alcohol decreases my feelings of guilt about not working.                                   |
| Agree | Disagree | 71. | I feel more coordinated after I drink.  |
| Agree | Disagree | 72. | Alcohol makes me more interesting.  |
| Agree | Disagree | 73. | A few drinks make me feel less shy.   |
| Agree | Disagree | 74. | If I am tense or anxious, having a few drinks makes me feel better.                         |
| Agree | Disagree | 75. | Alcohol enables me to fall asleep more easily.  |
| Agree | Disagree | 76. | If I am feeling afraid, alcohol decreases my fears.   |
| Agree | Disagree | 77. | A couple of drinks makes me more aroused or physiologically excited.                        |
| Agree | Disagree | 78. | Alcohol can act as an anesthetic, that is, it can deaden pain                               |
| Agree | Disagree | 79. | I enjoy having sex more if I have had some alcohol.   |
| Agree | Disagree | 80. | I am more romantic when I drink.  |
| Agree | Disagree | 81. | I feel more masculine/feminine after a few drinks.  |
| Agree | Disagree | 82. | When I am feeling antisocial, drinking makes me more gregarious.                            |
| Agree | Disagree | 83. | Alcohol makes me feel better physically.  |
| Agree | Disagree | 84. | Sometimes when I drink alone or with one other person it is easy to feel cozy and romantic. |
| Agree | Disagree | 85. | I feel like more of a happy-go-lucky person when I drink.                                   |
| Agree | Disagree | 86. | Drinking makes get-togethers more fun.  |
| Agree | Disagree | 87. | Alcohol makes it easier to forget bad feelings.   |
| Agree | Disagree | 88. | After a few drinks, I am more sexually responsive.  |
| Agree | Disagree | 89. | If I am cold, having a few drinks will give me a sense of warmth.                           |

GO TO THE NEXT PAGE .....

**ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW**

- |       |          |      |   |
|-------|----------|------|---|
| Agree | Disagree | 90.  | It is easier to act on my feelings after I have had a few drinks.                                       |
| Agree | Disagree | 91.  | I become lustful when I drink.  |
| Agree | Disagree | 92.  | A couple of drinks makes me more outgoing.  |
| Agree | Disagree | 93.  | A drink or two can make me feel more wide awake.  |
| Agree | Disagree | 94.  | Alcohol decreases my hostilities.   |
| Agree | Disagree | 95.  | Alcohol makes me feel closer to people.   |
| Agree | Disagree | 96.  | I tend to be less self -critical when I have something alcoholic to drink.                              |
| Agree | Disagree | 97.  | I find that conversing with members of the opposite sex is easier for me after I have had a few drinks. |
| Agree | Disagree | 98.  | Drinking makes me feel flushed.   |
| Agree | Disagree | 99.  | It is easier to remember funny stories or jokes if I have been drinking.                                |
| Agree | Disagree | 100. | After a few drinks, I am less submissive to those in positions of authority                             |
| Agree | Disagree | 101. | Alcohol makes me more talkative.  |
| Agree | Disagree | 102. | I am more romantic when I drink.  |
| Agree | Disagree | 103. | Men can have orgasms more easily if they have had a drink.  |
| Agree | Disagree | 104. | A drink or two is really refreshing after strenuous physical activity.                                  |
| Agree | Disagree | 105. | Alcohol enables me to have a better time at parties.  |
| Agree | Disagree | 106. | I can be more persuasive if I have had a few drinks.  |
| Agree | Disagree | 107. | Drinking makes people feel more at ease in social situations.   |
| Agree | Disagree | 108. | Alcohol helps me sleep better.  |
| Agree | Disagree | 109. | After a drink or two, things like muscle aches and pains do not hurt as much.                           |
| Agree | Disagree | 110. | Women are friendlier after they have had a feel drinks.   |
| Agree | Disagree | 111. | Alcohol makes me worry less.  |
| Agree | Disagree | 112. | Alcohol makes it easier to act impulsively or make decisions quickly.                                   |
| Agree | Disagree | 113. | Alcohol makes me feel less shy.   |

GO TO THE NEXT PAGE .....

Agree	Disagree	114. Alcohol makes me more tolerant of people I do not enjoy.
Agree	Disagree	115. Alcohol makes me need less attention from others than I usually do.
Agree	Disagree	116. A drink or two can slow me down, so I do not feel so rushed or pressured for time.
Agree	Disagree	117. I feel more sexual after a few drinks.
Agree	Disagree	118. Alcohol makes me feel better physically.
Agree	Disagree	119. Having a drink in my hand can make me feel secure in a difficult social situation.
Agree	Disagree	120. Things seem funnier when I have been drinking, or at least I laugh more.

Appendix L

Demographic Information

1. Are you?

- Female
- Male
- Transgender (Born as male)
- Transgender (Born as female)
- Other \_\_\_\_\_

2. Are you? (Check all that apply) (Optional)

- American Indian/Native American
- Asian/Asian American
- Black/African American
- Hispanic/Latino/a
- White/European American
- Other (\_\_\_\_\_)

3. What is your age?

\_\_\_\_\_ years old

7. Highest grade in school completed?

(In other words, if you completed two years of college, you would write 14 below.)

\_\_\_\_\_ highest grade completed

8. Please estimate your total yearly income ( please include all sources such as income from parents, trust funds, investments etc.)

\$ \_\_\_\_\_

9. Is there a history of alcohol problems in your family?

- Yes
- No



10. If yes to question #12, who in your family has, or had an alcohol problem?

---

11. Have you ever had treatment for an alcohol problem previously?

- Yes
- No

12. Have you ever attended Alcoholics Anonymous meetings?

- Yes
- No

If yes, for what length of time did you attend?

---

13. Have you ever attended Narcotics Anonymous meetings?

- Yes
- No

If yes, for what length of time did you attend?

---

13. Have you ever been to treatment excluding AA or NA for alcohol or drug problems?

- Yes
- No

If yes, Please Describe what kind of treatment it was:

- Inpatient
- Outpatient
- Detox
- Methamphetamine Maintenance
- Outpatient Group
- Outpatient Individual

14. If you have been through treatment, how many times?

\_\_\_\_\_

15. How many days during the past 30 days have you used:

Alcohol – any use at all \_\_\_\_\_  
Alcohol – to intoxication \_\_\_\_\_  
Cannabis \_\_\_\_\_  
Amphetamines \_\_\_\_\_  
Hallucinogens \_\_\_\_\_  
Cocaine \_\_\_\_\_  
Heroin \_\_\_\_\_  
Methamphetamine \_\_\_\_\_  
Other Opiates/ Analgesics \_\_\_\_\_  
Barbiturates \_\_\_\_\_  
Other Sedatives/Hypnotics/Tranquilizers \_\_\_\_\_  
Inhalants \_\_\_\_\_  
More than one substance per day (include alcohol) \_\_\_\_\_

16. How many years have you used 3 or more times per week?

Alcohol – any use at all \_\_\_\_\_  
Alcohol – to intoxication \_\_\_\_\_  
Cannabis \_\_\_\_\_  
Amphetamines \_\_\_\_\_  
Hallucinogens \_\_\_\_\_  
Cocaine \_\_\_\_\_  
Heroin \_\_\_\_\_  
Methamphetamine \_\_\_\_\_  
Other Opiates/ Analgesics \_\_\_\_\_  
Barbiturates \_\_\_\_\_  
Other Sedatives/Hypnotics/Tranquilizers \_\_\_\_\_  
Inhalants \_\_\_\_\_  
More than one substance per day (include alcohol) \_\_\_\_\_

## Appendix M

### **Instructions for Interviewers for Individual Sessions**

Hi,

I'm going to give you some information to orient you to the study, and what you can expect during this session and the next one when we meet individually again.

The purpose of this study is to test a new treatment for alcohol use. We are adding a different component to more traditional treatment approaches by incorporating the use of videotape. Essentially, what you will be asked to do is record yourself daily using the video camera that we will provide, and you will be asked to answer some specific questions about your alcohol use while filming yourself. There will be two different sets of questions: one set you will use on the days when you do not consume alcohol, and the other to be used on the days you do decide to consume alcohol. I will explain more about that later.

The reason we are interested in daily recording and answers to alcohol-related questions is that individuals often report feelings about drinking that tend to fluctuate over time. Also, they may feel differently about drinking when they are sober or drinking. Our intention is to capture these different moments to see if people's perceptions about drinking changes over time.

We do know that, in general, monitoring behavior can lead to changes in that behavior, so you may experience some changes in your drinking just by self-monitoring either your alcohol use, or thoughts about your alcohol use.

Do you have any questions so far?

Okay, now I'll tell you about these individual sessions and what you can expect.

Today is our first session. What I am going to do today is to teach you how to use the video camera and give you the question scripts to take home with you. As I said before, there are two different scripts, one to use on the days when you decide to consume alcohol, and the other for the days that you don't drink (show participant the scripts.)

You will have the video camera for one week. What we would like you to do is to set it up in your place of residence and keep it there for the whole week. Please don't take the camera anywhere else other than your residence. Everyday you will record yourself and answer some questions while recording yourself.

On all the days when you decide to drink, if you decide to drink, I'd like for you to record yourself on camera after you have finished drinking. Basically this means whenever you end up arriving home after drinking or as soon as after drinking as possible. If for some reason you forget to record yourself or don't come home, please record yourself as soon as you can, even if it's the next day. When you turn on the video camera, make sure you have the drinking script ready and answer all the questions facing the camera while the camera is running.

On the days when you decide not to drink, I'd like for you to record yourself on camera, answering the questions that are on the non-drinking days script. Please try to record yourself during times when you have thoughts about drinking. In other words, if you have any thoughts at all about alcohol during the day, try to record yourself as close as possible to the time when you had the thoughts about alcohol.

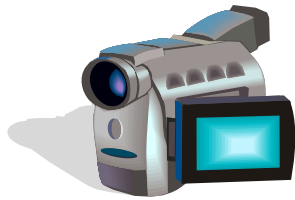
Any questions?

Okay, that's the first session. When we meet again in one week, please bring the video camera and question scripts with you. What we will do during that time is meet for

approximately an hour and a half. We will watch some of the videotape together and then I will ask you some questions about your thoughts about what you saw, the questions you answered, and your thoughts about alcohol use and any changes you might have made.



- 5) HOW TEMPTED WERE YOU TO DRINK TODAY?  
(ANSWER FROM 1-10; 1=NOT AT ALL TEMPTED, 10=  
ABSOLUTELY TEMPTED)  
IF YOU WERE AT ALL TEMPTED, DESCRIBE THE SITUATION  
AND HOW YOU FELT. IF YOU WERE NOT TEMPTED,  
DESCRIBE WHY YOU THINK THAT WAS.**
- 6) HOW CONFIDENT WERE YOU THAT YOU COULD ABSTAIN  
FROM DRINKING TODAY (ANSWER FROM 1-10; 1=NOT AT  
ALL CONFIDENT, 10= ABSOLUTELY CONFIDENT)  
  
DESCRIBE WHY YOU WERE, OR WHY YOU WERE NOT  
CONFIDENT.**
- 7) HAVE YOU NOTICED ANY CHANGES IN YOUR DRINKING  
SINCE YOU'VE BEGUN MAKING YOUR VIDEO DIARY? WHAT  
HAVE YOU NOTICED?**



**ON DRINKING DAYS AFTER DRINKING, PLEASE  
ANSWER THE FOLLOWING QUESTIONS IN YOUR VIDEO**

**DIARY:**

**1) PLEASE RATE YOUR CURRENT MOOD ON A SCALE OF 1-7:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>EXTREMELY NEGATIVE</b>						<b>EXTREMELY POSITIVE</b>

**2) WHAT INFLUENCED YOUR DECISION TO DRINK TODAY?**

**3) APPROXIMATELY HOW MANY DRINKS DID YOU CONSUME AND OVER WHAT TIME PERIOD?**

**4) DID YOU CONSUME MORE OR LESS DRINKS THAN YOU THOUGHT YOU WOULD? IF SO, WHY DO YOU THINK THIS WAS THE CASE?**

**5) WHAT DID YOU EXPECT WOULD HAPPEN WHEN YOU WERE OUT DRINKING? DID THE DRINKING EVENT MEET YOUR EXPECTATIONS?**

**6) DESCRIBE WHAT YOU DID AND DIDN'T LIKE (PROS AND CONS) ABOUT YOUR DRINKING EVENT? (DESCRIBE BOTH**



**THE MOST POSITIVE AND NEGATIVE THINGS THAT HAPPENED)**

- 7) IF YOU WERE WITH OTHER PEOPLE, WHAT DO THEY THINK ABOUT YOUR DRINKING? (IN OTHER WORDS, DO THEY REACT POSITIVELY, NEGATIVELY?)**
  
- 8) HAVE YOU NOTICED ANY CHANGES IN YOUR DRINKING SINCE YOU'VE BEGUN MAKING YOUR VIDEO DIARY? WHAT HAVE YOU NOTICED?**