

ABSTRACT

A Pilot Study on the Effects of Brief-ACT on College Student Drinking, Correlates of Drinking, and Cognitive Fusion

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The current study aimed to examine the feasibility and preliminary effectiveness of a single session of modified Acceptance and Commitment Therapy. The study investigated whether various drinking outcome variables, cognitive fusion, a theoretically-hypothesized mechanism of change in ACT which has yet to be studied empirically, and dispositional mindfulness would significantly reduce after the intervention. The study also explored associations between outcome variables (drinking variables and cognitive fusion) and other process variables (e.g., cognitive fusion, dispositional mindfulness, and drinking coping motives). Participants were 139 undergraduate students who completed questionnaires at baseline (BL), the intervention, and then questionnaires at follow-up (FU; two- to four-weeks post-intervention). Statistically significant reductions were found in all drinking outcomes, cognitive fusion, and dispositional mindfulness (Cohen's d 's = .22 – 1.78) from BL to FU. Exploratory autoregressive analyses found significant associations between all drinking outcomes and

copied motives, but not between drinking outcomes and either cognitive fusion or dispositional mindfulness. A post-hoc hierarchical linear regression found a significant two-way interaction effect indicating that cognitive fusion moderated the relationship between BL and FU negative alcohol-related consequences, such that participants who were high in BL cognitive fusion had greater rank order stability between BL and FU negative alcohol-related consequences and those low in BL cognitive fusion had less rank order stability in negative alcohol-related consequences from BL to FU. Results provide initial support for the effectiveness of a single session ACT intervention among a population of college students. Implications for further intervention refinement and future research are summarized.

A Pilot Study on the Effects of Brief-ACT on College Student Drinking, Correlates of
Drinking, and Cognitive Fusion

by

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TABLE OF CONTENTS

CHAPTER ONE	1
Introduction	1
Mortality, Morbidity, and Negative Consequences	1
Drinking Motives	2
Coping Drinking Motives and College Student Drinking Behaviors	3
Existing Treatment for Alcohol Use Disorders in College Students	5
Summary of Existing Brief Interventions for College Student Drinking	8
Acceptance and Commitment Therapy for Substance Use Behaviors and Disorders	9
Evidence for ACT for Substance Use and Related Disorders	15
Clinical Implications/Conclusions	16
The Present Study/ Study Aims	16
Hypotheses	17
CHAPTER TWO	18
Methods	18
Participants	18
Procedures	18
Measures	19
Primary Outcome Measures	19
Process Measures	20
Data Analysis	22
CHAPTER THREE	23
Results	23
Participant Attrition	23
Sample Characteristics and Descriptives	25
Alcohol Use Characteristics of Participants	26
Covariate Selection for Pre- versus Post-treatment Analyses	26
Pre-to-Post Changes in Outcomes Variables	30
Exploratory Process Analyses	31
Post-hoc Analyses: Moderators of Pre- and Post-treatment Associations	34

CHAPTER FOUR	39
Discussion	39
Limitations and Future Directions	49
Conclusion	50
APPENDIX A	52
Brief ACT Protocol	52
APPENDIX B	72
Questionnaires	72
REFERENCES	90

LIST OF FIGURES

Figure 1. Participant flow chart following Consolidated Standards of Reporting Trials guidelines.....	23
Figure 2. Follow-up (FU) Negative Alcohol-related Consequences (RAPI) as a Function of Baseline (BL) Alcohol-related Consequences and BL Cognitive Fusion, illustrating Step 2 of the Multiple Hierarchical Regression Analysis in Table 2.....	37

LIST OF TABLES

Table 1. Descriptive Statistics of Process and Outcome Variables.....	27
Table 2. Results of Paired Samples <i>t</i> -tests Comparing Pre-to-Post Changes in Outcome Variables.....	30
Table 3. Regressed Change Analyses in Hierarchical Multiple Regression for Cognitive Fusion and Drinking Outcomes.....	32
Table 4. Regressed Change Analyses in Hierarchical Multiple Regression for Mindfulness and Drinking Outcomes.....	33
Table 5. Regressed Change Analyses in Hierarchical Multiple Regression for Coping Motives and Drinking Outcomes.....	34
Table 6. Results of the Moderated-Regression Analysis Examining the Interaction Effects of BL Log-transformed Negative Alcohol-Related Consequences (BL RAPI) and BL Cognitive Fusion (BL CFQ) in Predicting FU Log-transformed Negative Alcohol-related Consequences (FU RAPI)	36

LIST OF ABBREVIATIONS

ACT	Acceptance and Commitment Therapy
APA	American Psychiatric Association
BL	Baseline
BME	Brief Motivational Enhancement
FU	Follow-up
NIAAA	National Institute for Alcohol Abuse and Alcoholism

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DEDICATION

To all those who find the inner strength to be self-compassionate in their suffering and
continue to draw meaning from their journey

CHAPTER ONE

Introduction

College student drinking is a significant public health problem that leads to substantial distress and impairment across domains of functioning. Existing brief interventions for college student drinking reduction do not adequately address drinking to cope with negative affect (coping motives), a reason for drinking that research shows is endorsed by as many as 42.3% of college students. Acceptance and Commitment Therapy (ACT) may address such motives for drinking, thereby improving college student drinking outcomes. The current study will introduce rationale for a single session ACT intervention and test hypotheses regarding the effect of the intervention on drinking and correlates of drinking. The study will also examine the effect of the intervention on cognitive fusion, a theoretically-derived mechanism of change in ACT that has not yet been consistently supported by research.

Mortality, Morbidity, and Negative Consequences

College student drinking and alcohol use disorders create impairment in psychological, physical, social, familial, academic, and vocational areas in one's life. Among college students between the ages of 18-24, it is estimated that 1,825 die from alcohol-related unintentional injuries (i.e., motor vehicle crashes) and 599,000 sustain alcohol-related unintentional injuries per year (Hingson, Zha, & Witzman, 2009). Additionally, an estimated 97,000 college students are victims of alcohol-related sexual

assault or date rape (Hingson et al., 2009). Other specific consequences of abusive college student drinking include unplanned and unprotected sex, drunk driving, academic problems, health problems, suicide attempts, vandalism, property damage, and involvement with law enforcement (National Institute on Alcohol Abuse and Alcoholism, NIAAA, 2012). Furthermore, excessive alcohol consumption has been shown to impair the structure and function of the brain, making it harder to stop drinking alcohol (Lisdahl & Tapert, 2012).

Clinical problems regarding alcohol use are also highly rampant. According to special analyses conducted utilizing the NESARC study data, 19.0% of college students age 18-24 met criteria for an alcohol use disorder (NIAAA, 2002). Estimates based on self-report questionnaires have been as high as 31% of college students meeting criteria for Diagnostic and Statistical Manual of Mental Disorders IV – Text Revision (DSM-IV-TR, American Psychiatric Association, 2000) alcohol abuse and 6% meeting criteria for alcohol dependence (Knight et al., 2002).

Thus, due to increasing frequency of alcohol-related mortality and morbidity (Hingson et al., 2009), among other psychosocial consequences, a closer examination of the reasons and interventions for college student drinking behaviors is warranted.

Drinking Motives

An individual's reasons for consuming alcohol can vary widely and these drinking motives have been associated with a variety of behavioral correlates. Drinking motives refer to the psychological function that alcohol consumption achieves and is commonly measured by self-report questionnaires assessing reasons for drinking (Baer, 2002). Evidence reliably demonstrates that drinking motives are the most proximal

gateway through which more distal alcohol outcomes are mediated (e.g., Cox and Klinger, 1998, 1990; Cooper, 1994; Cooper, Frone, Russell, & Mudar, 1995; Kassel, Jackson & Unrod, 2000; Ratliff & Burkhardt, 1984). Importantly, evidence supports the conceptualization that drinking motives are a more proximal factor of drinking than alcohol expectancies, the beliefs about the positive or negative cognitive, emotional, and behavioral effects of alcohol consumption (Baer, 2002; Cronin, 1997; Leigh, 1990). For example, while one may endorse the belief that alcohol use reduces tension, it does not necessarily follow that they consume alcohol because they desire to reduce tension.

The literature indicates that the most common reason for drinking in college students are social, enhancement, coping, and then conformity motives (Stewart, Zeitlin, & Samoluk, 1996; Thombs, Beck, & Please, 1993; Van Damme et al., 2013) in decreasing order of prevalence. While social motives for drinking have actually been found to be inversely associated with heavy drinking and alcohol-related problems (Karwacki & Bradley, 1996; Labouvie & Bates, 2002), coping motives for drinking are positively associated with the most harmful and problematic effects of drinking behavior including risky behaviors, poor physical self-care, physiological dependence, and academic/occupational problems, among others (Merrill and Read, 2010; Merrill, Wardell, & Read, 2014). Estimates of any endorsement of coping motives range from 23.8% to 42.3% in college students. Coping motives can be thought of drinking to cope with negative affect, for tension reduction, or experiential avoidance.

Coping Drinking Motives and College Student Drinking Behaviors

Evidence for a positive relationship between coping motives and negative-alcohol related consequences is found in both cross-sectional and longitudinal studies in college

student samples with Pearson product moment correlations ranging from $r = 0.31$ to 0.68 (Grant, Stewart, O'Connor, Blackwell, & Conrad, 2007; Kassel et al., 2000; Park & Levenson, 2002). Similarly, Ebersole, Noble, and Madson (2012) found a positive association between drinking to cope and negative consequences ($r = 0.65$). Additionally, in a cross-sectional study by Carey and Correia (1997) which examined the incremental validity of negative reinforcement motives beyond positive reinforcement motives, negative reinforcement motives had a direct effect on negative alcohol-related consequences ($R^2 = 0.41$) and indirect effect mediated by heavy alcohol consumption levels ($R^2 = 0.60$).

Regarding the association between coping motives and specific negative alcohol-related consequences in college students, small to medium (positive) direct associations have been found with academic/educational problems, risky behavior, poor physical self-care, impaired control, diminished self-perception, physiological dependence, and other risky behaviors, independent of level of alcohol use (Merrill & Read, 2010; Merrill, Wardell, & Read, 2014). Study authors note that poor role development is predictive of progression to more severe symptoms such as physiological dependence and impaired control over alcohol consumption. Notably, Carpenter and Hasin (1998) found that among adults age 18 through 65, coping motives predicted a DSM-IV alcohol dependence diagnosis one year later.

Coping motives are also positively associated with quantity and frequency of heavy drinking in college students. A cross-sectional study in US college students reported medium correlations between coping motives and both composite alcohol quantity x frequency and frequency of heavy episodic drinking, respectively (r 's = 0.45 ;

Park & Levenson, 2002). Similarly, a longitudinal study found a positive relationship between coping motives and frequency of heavy drinking ($r > 0.30$) (Rutledge & Sher, 2001).

Existing Treatment for Alcohol Use Disorders in College Students

As research has found that the most frequently endorsed type of drinking motives are social and conformity motives, most interventions for college student drinking have theoretically focused on changing perceptions of social norms and expectancies in order to affect drinking outcomes. However, social motives have been found to be inversely associated with heavy drinking and alcohol-related problems (Karwacki & Bradley, 1996; Labouvie & Bates, 2002), whereas coping motives have been shown to have positive associations with drinking behaviors, suggesting that coping drinking may be a worthwhile target for intervention.

Brief options for addressing college student alcohol consumption and harm reduction are necessary due the multiple time demands present in the college/university environment. Additionally, evidence has long indicated that the modal number of sessions for treatment in community mental health systems is one session (Gibbons et al., 2011). As summarized below, short-term (1- to 3-months) effect sizes for brief interventions for college student drinking range from small to medium. Some studies even suggest that brief and single-session interventions can affect drinking behavior up to four years after the intervention was administered.

NIAAA (2002) identified various tiers of efficacy for individual-level interventions for drinking reduction in college students. Tier 1 interventions (two or more favorable randomized control trials available) include (1) combination cognitive-behavior

skills training (CBST) with norms clarification and motivational enhancement interventions, (2) brief motivational enhancement (BME) interventions, and (3) alcohol expectancy challenge interventions. Research on the combined CBST, norms clarification, and motivational enhancement approach suggests that it is effective in reducing alcohol consumption (Larimer & Crouce, 2002, 2007). One such approach is the Alcohol Skills Training Program (ASTP) which incorporates education about moderate drinking, how to cope with high-risk situations of abusive alcohol consumption, and an expectancy challenge component (Marlatt, Baer, & Larimer, 1995; Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1990). Randomized controlled trials showed that participants in the ASTP condition evidenced reductions in alcohol consumption and alcohol-related consequences, compared to control groups, at 1- and 2-year follow-up (Baer et al., 1992; Kivlahan et al., 1990).

BME interventions, such as Brief Alcohol Screening and Intervention for College Students (BASICS), also aim to enhance one's intrinsic motivation to change their drinking behavior by utilizing assessment and feedback. BMEs consist of a single 45-minute session and have been shown to be effective individually and in small groups. BASICS, which was developed based on ASTP (Dimeff, Baer, Kivlahan, & Marlatt, 1999) is designed for high-risk drinkers and is composed of two individual 45- to 60-minute sessions. Specific components include personalized feedback about drinking behaviors and motivational interviewing (Miller & Rollnick, 2002). Within samples of college students who participated in brief motivational interventions, effect sizes ranged from small to medium ($d = .1$'s - $.4$'s) for alcohol consumption and alcohol-related consequences, compared to control group participants, at 1-, 2-, and 4-years follow-up

(Baer, Kivlahan, Blume, McKnight, & Marlatt, 2001; Carey, Carey, Maisto, & Henson, 2006; Marlatt et al., 1998). Newer approaches to meta-analysis (e.g., individual-participant level data) that account for highly skewed drinking outcome variables, suggest that overall effects of BMEs may be even smaller than initially thought or or nonsignificant (e.g., Huh et al., 2015).

Expectancy challenge (EC) interventions strive to change college student's social and sexual enhancement expectations about the effects of alcohol via education and experiential learning (e.g. alcohol vs. placebo beverage administration). Randomized controlled studies have examined dosages of one, two, and three sessions for the EC condition. Evidence for reductions in drinking outcomes indicate good effects at 6-weeks follow-up in men, but lacks consistent support for such reductions in women (Lau-Barraco & Dunn, 2008; Wiers, Wood, Darkes, Corbin, Jones & Sher, 2003; Wiers, van de Luitgaarden, & vand den Wildenberg, 2005). Furthermore, there have not yet been consistent significant between-group effects compared to control groups (Musher-Eizenman & Kulick, 2003; Wiers & Kummeling, 2004). One meta-analysis of 19 EC interventions ($N = 1,415$) reported between-group effect sizes ranging from $d = .23$ to $.28$ and within-group effect sizes ranging from $d = .13$ to $.36$ for alcohol consumption and frequency of heavy drinking (Scott-Scheldon, Terry, Carey, Garey, & Carey, 2012).

Although all NIAAA (2002) Tier 1 approaches focus on motives for drinking that are positively and negatively reinforced by environmental/social factors as rationale for intervention, since the initiation of the current study, researchers have begun to target motives for drinking related to changing internal experiences (e.g., affect) via brief mindfulness- and acceptance-based interventions. Since the initiation of the current study,

one laboratory-based and one treatment study have examined the effect of mindfulness and acceptance techniques on college student drinking behavior. Vinci et al. (2014) found that a 10-minute guided breathing meditation was not associated with within-group reduction in urge to drink after a negative affect manipulation. Mermelstein and Garske (2015) developed a 4-week mindfulness-based intervention to specifically reduce binge drinking in a sample of college students who endorsed binge drinking. This mindfulness condition included two guided mindfulness meditation exercises and a cue exposure during the first session, another guided mindfulness meditation two weeks later, and one hour of formal mindfulness meditation over the course of the four weeks of assessment. Compared to the inactive control group the mindfulness condition was associated with significantly fewer binge episodes and negative alcohol-related consequences as well as greater dispositional mindfulness at 4-weeks follow-up.

Summary of Existing Brief Interventions for College Student Drinking

Overall, the majority of Tier I individual-level interventions for college student drinking are based on modifying social expectations about drinking and social motives for drinking. Empirically supported approaches include (1) a combination of cognitive-behavioral skills for coping with high-risk drinking situations, norms clarification, and motivational enhancement, (2) motivational enhancement alone, and (3) experiential expectancy challenges. While there is consistent evidence supporting the three-fold combination and motivational enhancement alone, they are typically most successful for students deemed “high-risk drinkers” with both within- and between-group effect sizes ranging from small to medium (Carey, Scott-Scheldon, Carey, & DeMartini, 2007) . Furthermore, although the existing interventions target college students who endorse

social drinking motives (inversely associated with heavy drinking and negative alcohol-related consequences), despite empirical evidence suggesting that coping motives are positively associated with heavy drinking and negative alcohol-related consequences, with exceptional risks for college students (Carrey & Correia, 1997; Kassel et al., 2000; Magid, MacLean, & Colder, 2007; Merrill & Read, 2010).

In summarizing extant approaches for college students, it is plausible that interventions targeting drinking to cope with negative internal experiences, or experiential avoidance, may be beneficial for the college student population – and particularly for women as they most frequently endorse alcohol coping motives. This rationale is consistent existing calls for interventions that target the function of drinking for coping-motivated college students, perhaps via teaching alternative adaptive affect management skills (e.g., Merrill & Read, 2010; Merrill, Wardell, & Read, 2014; Wilson, Cooper, Nugent, & Champion, 2016). Mermelstein and Garske's (2015) results of their intervention with college student binge drinkers suggest preliminary support for such an intervention aiming to reduce experiential avoidance through mindfulness- and acceptance-based practices. Thus, examining brief interventions that target drinking in order to avoid negative emotions (coping motives), via acceptance and mindfulness techniques, continues to be warranted. The present study sought to address this gap in the literature.

Acceptance and Commitment Therapy for Substance Use Behaviors and Disorders

Acceptance and Commitment Therapy (ACT) may be more able to adequately address using alcohol to cope with negative affect because ACT is composed of interventions that aim to reduce experiential avoidance and cognitive fusion, processes

that only prolong negative affect (Hayes, Stosahl, & Wilson, 1999). Based in the ACT/Relational Frame Theory model of psychopathology, ACT aims to decrease experiential avoidance and cognitive fusion through acceptance and cognitive defusion techniques, respectively (Hayes, Barnes-Holmes, & Roche, 2001; Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

Acceptance is a skill that can be learned in order to correct the problem of experiential avoidance. Acceptance refers to actively embracing private events as they are presently occurring in an intentionally open and nonjudgmental manner (Hayes, Stosahl, & Wilson, 2012; Twohig & Hayes, 2008). In the context of college student drinking behavior, experiential avoidance refers to the function of coping-motivated drinking: the goal is to control, suppress, or avoid unwanted internal events (Hayes et al., 2012).

Cognitive defusion refers to changing the context in which private mental events, namely thoughts, are experienced: weakening the functional control of literal, evaluative, and rule-based responding (Hayes et al., 2012; Twohig & Hayes, 2008). The process of cognitive defusion is employed to “deliteralize” and detach from one’s thoughts with the goal of relating to one’s thoughts from an ongoing observational frame of reference. Cognitive fusion refers to the over-attachment to contents of private mental events, through which thoughts are perceived as literal truths about oneself and the environment. Bernstein, Hadash, Lictash, Tanay, Shepherd, & Fresco’s (2015) Metacognitive Processes Model of decentering further conceptualizes cognitive fusion as a type of meta-awareness that reflects increased reactivity to the content of thoughts.

Cognitive defusion as a mechanism of change in ACT. Cognitive fusion-defusion are assumed to be essential mechanisms of change in ACT (Hayes et al., 2006; Hayes et al., 2012; Luoma & Hayes, 2003). However, the measurement and thus scientific investigation of this hypothesis has only recently been attempted. Gillanders et al. (2014) offer a broad behavioral operationalization of cognitive fusion that includes dominance of thoughts in one's experience, incapacity to view thoughts from an alternative perspective, emotional reactions to thoughts, thoughts highly controlling one's behavior, efforts to control thoughts, overanalyzing one's circumstances, evaluation and judgment of the content of one's thoughts, literality of thoughts, and believability of thoughts.

A meta-analysis of laboratory-based component studies coded each study based on the component of the psychological flexibility model it targeted (i.e., acceptance, defusion; Levin, Hildebrandt, Lillis, & Hayes, 2012). Levin et al. (2012) included six defusion studies overall and found a significant medium effect size ($g = 0.74$) for all outcomes of those studies. Four of the defusion studies measured theoretically-related outcomes of defusion (e.g. rumination, worry) which also evidenced a medium effect size ($g = 0.77$).

However, longitudinal evidence supporting the hypothesis that cognitive fusion itself (and not related constructs such as believability or rumination) is a mechanism of change of ACT outcomes is lacking (Ciarrochi, Bilich, & Godsell, 2010; Hesser, Westin, Hayes, & Andersson, 2009). To this author's knowledge only one study has examined the role of cognitive defusion as a mechanism of change in ACT. Hesser et al. (2009) coded in-session cognitive defusion behaviors and found that peak level and frequency of cognitive fusion rated in Session 2 (out of a maximum of 10 sessions) mediated symptom

reduction at 6-month follow-up. Other studies have found that ACT is associated with reductions in constructs theoretically-related to cognitive fusion such as believability of delusions and believability of dysfunctional thoughts (Bach & Hayes, 2002; Guadiano & Herbert, 2006; Zettle & Hayes, 1986).

Despite the paucity of scientific investigation of the role of cognitive defusion as a mechanism of change, there is emerging evidence that psychological inflexibility (as measured by the 2004 version of the Acceptance and Action Questionnaire) may be a mechanism of change in ACT (e.g., Dalrymple & Herbert, 2007; Forman, Herbert, Moitra, Yeomas, & Gellar, 2007; Gifford et al., 2004; Kocovski, Fleming, & Rector, 2009; Zettle & Hayes, 1986). Notably, with the exception of Gifford et al. (2004) and Zettle and Hayes (1986), the aforementioned studies did could not conduct formal mediational analyses because mediator variables were only assessed at two time-points and the studies did not compare the ACT condition to a control condition; these studies utilized analyses similar to Doss and Atkins' (2006) and Hofmann's (2004) approach. Evidence also suggests that ACT increases acceptance of internal experiences (Blackledge & Hayes, 2006; Hayes, Bissett et al., 2004; Hesser et al., 2009; Varra, Hayes, Roget, & Fisher, 2008). Thus, examination of cognitive fusion-defusion as a crucial process to target with ACT would enhance the veracity of this theoretically-derived treatment component.

The current study sought to examine associations between changes in drinking outcome variables and changes in cognitive fusion-defusion in order to address questions regarding cognitive fusion-defusion's potential role as a mechanism of change in drinking behavior. For college students, alcohol consumption and negative alcohol-

related consequences may be greater for those who are highly fused with, or reactive to, private mental events (e.g., negative thoughts, negative emotions) as drinking may be used as a coping strategy with the goal of reducing those unpleasant experiences. Thus, targeting cognitive defusion as potential mechanism of change may decrease one's level of reactivity to their thoughts and thereby reduce negative alcohol-related consequences and consumption.

Cognitive fusion and experiential avoidance are targeted with experiential exercises including metaphors, experiential exercises and mindfulness meditation practices. In ACT, mindfulness practices facilitate contact with the present moment in order to counteract being entrenched in thoughts about the past or future and become less reactive to unpleasant internal experiences. Greater attention to the present moment and acceptance of unpleasant cognitions and emotions may also enable college students who experience negative affect and cognitive fusion, and typically drink to avoid with these unpleasant mental events, to engage in more approach coping and reduce the likelihood that they consume alcohol and/or experience negative alcohol-related consequences.

Mindfulness, Coping Motives, and Alcohol Outcomes.

The association between dispositional mindfulness, drinking coping motives, and alcohol outcomes has not been adequately investigated to date. However, existing research suggests a complex association between dispositional mindfulness (as well as specific subconstructs of mindfulness) and various alcohol variables. Some studies suggest a negative association and others suggest a positive association. These myriad findings depend on the general or specific construct that is measured as well as the measurement tool (e.g., Five Facet Mindfulness Questionnaire [FFMQ], Baer, Smith,

Hopkins, Krietemeyer, & Toney, 2006; Kentucky Mindfulness Inventory [KIMS], Baer, Smith, and Allen, 2004; Frieburg Mindfulness Inventory [FMI], Walach, Buchheld, Bittenmüller, Kleinknecht, & Schmidt, 2006). Roos, Pearson, and Brown (2015) found that coping motives significantly mediated the negative relationship between some facets of mindfulness (i.e., describing with words, nonjudgment of experience, and acting with awareness as measured by FFMQ) and both alcohol use and alcohol problems in a cross-sectional sample of college students. Also using the FFMQ, Fernandez, Wood, Stein, and Rossi (2010) found that nonjudgment of experiences was negatively related to negative alcohol-related consequences after controlling for alcohol use and that both acting with awareness and describing with words were negatively related to alcohol use. Similarly, when using the KMI, Reynolds, Keogh, and O'Connor (2015) found that accepting without judgment and acting with awareness were negatively associated with both coping motives and alcohol use. Inverse associations support theory that specific mindfulness skills facilitate emotional regulation and distress tolerance and thus reduce drinking-related outcomes.

In contrast, after alcohol use was controlled for in analyses, Fernandez et al. (2010) found that describing of experience (as measured by FFMQ) was positively associated with negative alcohol-related consequences. Additionally, Leigh, Bowen, & Marlatt (2005) found a positive significant association between mind/body awareness (as measured by the FMI, similar to FFMQ's observe factor) and alcohol use and a nonsignificant association between mind/body awareness and coping drinking motives. Positive associations between specific mindfulness skills and alcohol use support rationale that increased description of experience and/or attunement to bodily sensations

may lead to increased drinking if these internal experiences are unpleasant. Thus, future examination of the associations between these variables is warranted and the current study will explore these associations as well.

Evidence for ACT for Substance Use and Related Disorders

Evidence increasingly supports the efficacy of ACT for reductions in substance use problems (Hayes, Wilson, et al., 2004; Luoma, Kohlenberg, Hayes, & Fletcher, 2012). Hayes et al. (2004) conducted a randomized controlled trial with three 16-session individually administered conditions, (1) methadone maintenance alone (MM), (2) ACT plus MM, or (3) intensive twelve step facilitation therapy (ITSF) plus MM, with a sample of polysubstance-abusing opiate addicts. ACT plus MM was found to have better outcomes for urinalysis of opiate use and objective assessment of any other drug use at 6-month follow-up as compared to MM alone. Similar results were found for ITSF plus MM compared to MM alone. Comparisons between ACT and ITSF conditions were only conducted if one differed from the MM condition and the other did not: ACT showed less self-reported drug use at follow-up compared to ITSF (Hayes, Wilson, et al., 2004). Similarly, in a randomized clinical trial of three two-hour sessions of ACT for shame in individuals with SUDs, Luoma et al. (2012) found that participants in the ACT condition had lower percent of substance use days for any given week during treatment and at 4-month follow-up compared to participants in the treatment as usual condition.

In a randomized controlled trial of individual cognitive behavioral therapy (CBT) and ACT for individuals with methamphetamine use disorders, while there were positive methamphetamine-related outcomes within-group for ACT, there were no significant between-group effects between CBT and ACT (Smout et al., 2010). A protocol

comprised of eight 90-minute individual sessions for marijuana dependence in three adults resulted in reduced self-reported and objectively-measured marijuana use (Twohig, Shoenberger, & Hayes, 2007). A case study on ACT for alcohol dependence resulted in 100% sobriety at 9-month follow-up (Heffner, Eifert, Parker, Hernandez, & Sperry, 2003). Trials of ACT and Nicotine Replacement Therapy (NRT) for smoking cessation evidenced superior smoking outcomes at 1-year follow-up (Gifford et al., 2004). To date while there have not been any investigations of ACT for drinking reduction in college students and only one theoretically similar intervention to reduce drinking in college students (i.e., Mermelstein and Garske, 2015), there is sufficient rationale that an ACT intervention may be worthwhile for this population.

Clinical Implications/Conclusions

Thus, interventions designed to help college students regulate unpleasant emotional and cognitive experiences via acceptance and cognitive defusion may be beneficial for reducing negative alcohol-related consequences and alcohol consumption.

The Present Study/ Study Aims

The present study is designed to be a pilot study of a single session of ACT, consistent with the first stage of the Stage Model of Behavior Therapies (Rounsaville, Carroll, & Onken, 2001). This will be the first study, to the author's knowledge, to examine the feasibility and preliminary effectiveness of a single session of ACT intervention on drinking behaviors in college students. The present study aims to examine whether a single session of ACT will reduce negative alcohol-related consequences and alcohol use (e.g., monthly drinking frequency, weekend drinking quantity). Furthermore,

the results of the current study will help examine the role of cognitive fusion, a theoretically-driven and key process variable of ACT. Additionally, the study aims to examine the role of potential mechanisms of change, or process variables: cognitive fusion, dispositional mindfulness, and coping motives as changes in these process variables may be associated with changes in main drinking outcomes.

Hypotheses

The following hypotheses will be examined:

Primary Outcome Hypotheses

Hypothesis 1) Drinking outcomes (negative alcohol-related consequences, monthly drinking frequency, and weekend drinking quantity) at follow-up (FU) will be significantly less than drinking outcomes at baseline (BL).

Hypothesis 2) Level of cognitive fusion at FU will be significantly less than level of cognitive fusion at BL.

Hypothesis 3) Level of dispositional mindfulness at FU will be significantly greater than level of mindfulness at BL.

Exploratory Aims – Process Variables

Exploratory Aim 1) FU cognitive fusion will be positively associated with all drinking outcomes at FU, after controlling for BL cognitive fusion and BL drinking outcome.

Exploratory Aim 2) FU dispositional mindfulness will be negatively associated with all drinking outcomes at FU, after controlling for BL dispositional mindfulness and BL drinking outcome.

Exploratory Aim 3) FU coping motives will be positively associated with all drinking outcomes at FU, after controlling for BL coping motives and BL drinking outcome.

CHAPTER TWO

Methods

Participants

The sample included 139 undergraduate students from Baylor University aged 18 and older. Participants were recruited between the summer of 2013 through fall of 2014 from the SONA Systems research pool. All participants received research participation credit for their contribution to the study after each of the following study components were completed: BL measures, the in-person session, FU measures, for a possible total of three research credits.

Procedures

Participants completed informed consent and BL questionnaires online. Upon completing BL questionnaires, all participants who meet the criteria for the intervention were invited to sign-up for an in-person session time slot. Exclusion criteria included (1) reporting drinking less than once in the past 30 days and/or (2) reporting current participation in psychotherapy. Completers of the intervention were asked to complete FU questionnaires two weeks after their completion of the intervention. Participants had a maximum of two weeks to complete the FU questionnaires, thus the FU time point ranged from two- to four-weeks after the intervention was administered.

Measures

Demographics Questionnaire. The demographics questionnaire was designed specifically for this study and to collect basic demographic information including age, gender, race, ethnicity, and current year in college. This was administered at baseline only.

Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1993). The DASS-21 is a 21-item measure assessing symptoms of depression, stress, and anxiety. Participants are asked to rate, on a 4-point scale (0 = *did not apply to me at all* to 3 = *applied to me very much, or most of the time*), the severity of symptoms over the past week. Internal consistency for the total scale in the current sample was high (Cronbach's $\alpha = .91$). The DASS-21 was used for comparisons between participants who enrolled or did not enroll in the intervention after screening and invitation and for comparisons between participants who completed or did not complete FU questionnaires after participating in the intervention.

Primary Outcome Measures

The following measures were administered at both baseline and follow-up time points.

Rutgers Alcohol Problem Index (White & Labouvie, 1989). The Rutgers Alcohol Problem Index (RAPI) is a 23-item, self-report measure designed to assess frequency of alcohol-related consequences on a five-point-scale (0 = *never* to 4 = *more than 6 times*) during the previous four months. The RAPI has exhibited good internal consistency ($\alpha = .89$) in prior research (White & Labouvie, 1989). The internal consistency for the present sample was .88.

Daily Drinking Questionnaire - Revised (DDQ-R; Collins, Parks & Marlatt, 1985). The DDQ-R is a self-report measure that is designed to assess alcohol consumption using both a continuous items from Callahan's Quantity/Frequency Index and a calendar approach. The study used the continuous items measuring monthly drinking frequency (7-point scale; *I did not drink at all* to *Once a day or more*) and weekend drinking quantity (32-point scale; ranging from 0 to 30 drinks and *more than 30 drinks*), as drinking outcome variables for a priori pre-post analyses.

Cognitive Fusion Questionnaire (Gillanders et al., 2014). The Cognitive Fusion Questionnaire (CFQ) is a 7-item scale (1 = *never true* to 7 = *always true*) designed to assess cognitive fusion. A sample of an items from the CFQ include, "My thoughts cause be distress or emotional pain" and "I tend to get very entangled in my thoughts." Thus, the CFQ was chosen to be used in the current study because it is the first psychometrically-sound measure of cognitive fusion. In addition to being examined as an outcome variable, it will also be used a process variable as cognitive defusion it is a hypothesized mechanism of change in ACT (Hayes et al., 2012). The internal consistency for the present sample was good ($r = .88$).

Process Measures

Drinking Motives Questionnaire – Revised (Cooper, 1994). The Drinking Motives Questionnaire – Revised (DMQ-R) is a 20-item self-report measure designed to assess the frequency of one's motives for consuming alcohol as based on the Motivational Model of Alcohol Use (Cox & Klinger, 1988, 1990). Frequency is rated on a five-point scale (1 = *almost never/never* to 5 = *almost always/always*). The DMQ-R includes coping, enhancement, social, and conformity motive subscales. Confirmatory

factor analyses supported this four-factor model with a comparative fit index (CFI) ranging from 0.90 to 0.94 (Cooper, 1994). The four-factor model of drinking motives has been confirmed in US adolescent and college student samples as well as national samples (Cooper, Kuntsche, & Stewart, 2008; Kuntsche, Knibbe, Gmel, & Engels, 2006; MacLean & Lecci, 2000). The coping subscale (e.g., “*Because it helps you when you feel depressed or nervous*”) was used current study as it assesses experiential avoidance via drinking. Coping motives was considered a process measure for the purpose of this study because drinking motives are shown to be proximal predictors of drinking behavior. Internal consistency in the present sample was good ($\alpha_{\text{coping}} = 0.87$).

Five Facet Mindfulness Questionnaire (Baer et al., 2006). The Five Facet Mindfulness Questionnaire (FFMQ) is a 39-item self-reported designed to assess dispositional/trait mindfulness, or nonjudgmental and accepting attention to the present moment, as a multifaceted construct. It employs a five-point scale (1 = *never or very rarely true* to 5 = *very often or always true*). The FFMQ includes five subscales including Observation of Experience, Describing with Words, Acting with Awareness, Nonjudging of Experience, and Nonreactivity to Experience. Confirmatory factor analyses supported this five-factor model with a comparative fit index (CFI) ranging from 0.93 to 0.96 (Baer et al., 2006). The FFMQ was used in the present study because it is a comprehensive measure of dispositional mindfulness with adequate psychometric support. The internal consistency for the total FFMQ score was .88.

Data Analysis

Data analysis will be conducted using SPSS Version 20. Only individuals who endorsed drinking at least one alcoholic beverage in the last month were included in the analyses. There was a small amount of missing data (<3% of participants for each study variable had missing data) that was resolved using multiple imputation (MI) based on the recommendations of Enders (2010). Values were imputed for missing data at the scale level for all variables. Five data sets with imputed values were created, all of the reported analyses were conducted five times, and their estimates were combined across data sets. Standard errors incorporated both within- and between-imputation variance (Enders, 2010).

In evaluating normality assumptions, skewness and kurtosis cutoffs of 1 and 3, respectively, were used (Tabachnick & Fidell, 2007). Thus, coping motives for drinking, negative alcohol-related consequences, and weekend drinking quantity, were log-transformed. The log-transformation improved normality of these variables, see Table 1. All other assumptions were examined and were reported if violated.

In order to reduce type I error, a false discovery rate was calculated using Benjamin and Hochberg's (1995) approach and .05 was used as the significance value for all planned analyses (primary outcomes).

Hypotheses 1, 2, and 3, focused on primary outcomes, were examined using paired sample *t*-tests. The exploratory process aims were analyzed using an autoregressive approach using hierarchical multiple regression in order to examine the association between to FU variables after controlling for their BL levels.

CHAPTER THREE

Results

Participant Attrition

Figure 1 shows participant flow through enrollment, allocation, follow-up, and analysis phases of the study following Consolidated Standards of Reporting Trials guidelines.

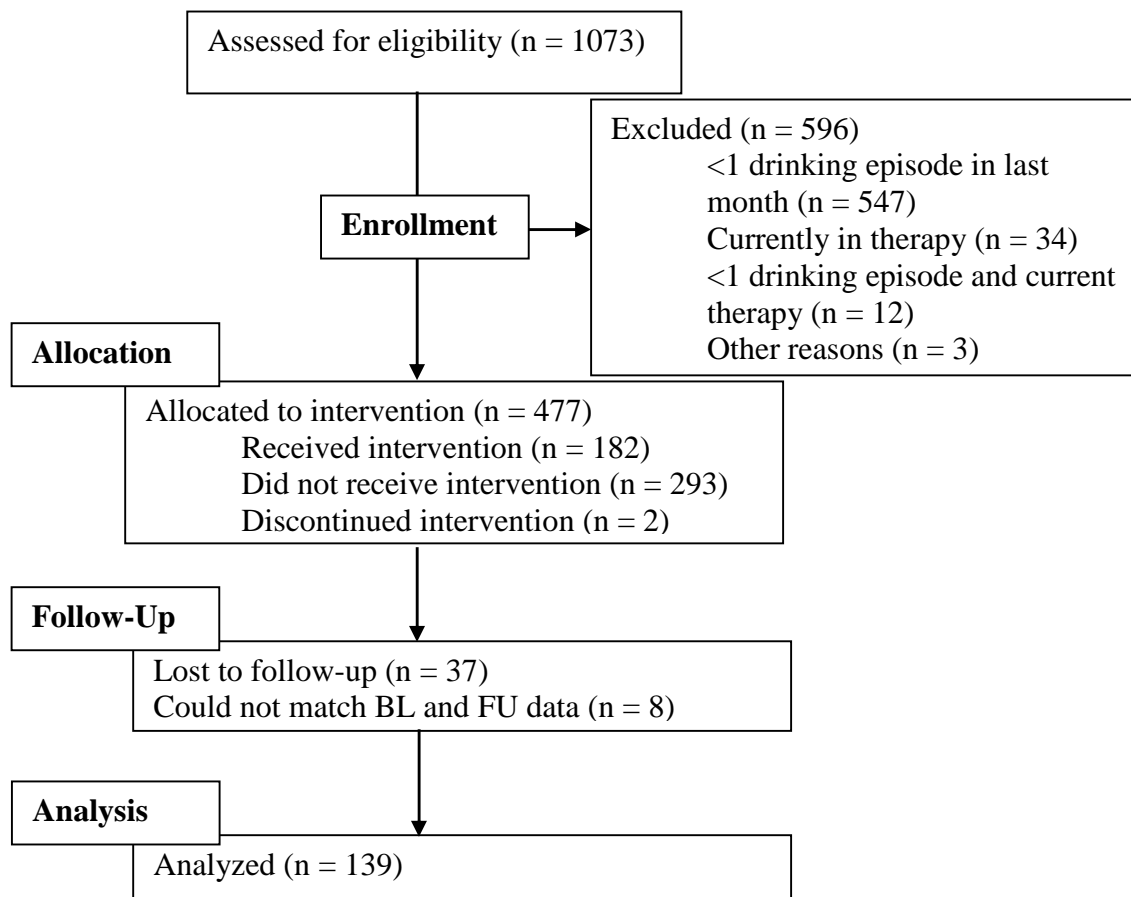


Figure 1. Participant flow chart following Consolidated Standards of Reporting Trials guidelines.

Chi-square and independent samples t-tests were conducted to examine differences between participants who enrolled in the intervention after invitation ($n = 184$) versus those whom did not enroll after invitation ($n = 293$). Age was not significantly different between those who enrolled ($M_1 = 19.28$, $SD_1 = 1.78$) versus those who did not enroll ($M_2 = 19.35$, $SD_2 = 1.44$), $t(472) = -0.53$, $p = .597$). Total depression, anxiety, and stress was not significantly different between those who did enroll ($M_1 = 35.47$, $SD_1 = 10.37$) compared to those who did not enroll ($M_2 = 33.93$, $SD_2 = 11.39$), $t(451) = 1.45$, $p = .148$. Similarly, negative alcohol-related consequences was not significantly different between those who did enroll ($M_1 = 5.27$, $SD_1 = 7.24$) versus those who did not ($M_2 = 4.11$, $SD_2 = 6.62$), $t(472) = 1.80$, $p = .072$. Additionally, weekend drinking quantity did not significantly differ between those who did enroll ($M_1 = 4.16$, $SD_1 = 3.25$) and those who did not enroll ($M_2 = 4.09$, $SD_2 = 3.40$), $t(172) = .25$, $p = .802$. However, the two groups did differ on monthly drinking frequency; those who did enroll in the intervention had higher mean monthly drinking frequency ($M_1 = 3.20$, $SD_1 = 0.95$) compared to those who did not enroll ($M_2 = 3.02$, $SD_2 = 0.93$), $t(473) = 2.11$, $p < .05$ (Cohen's $d = 0.00$, no effect). Similarly, there was a significant difference in gender composition between the two groups such that there was a higher proportion of women in the group who enrolled in the intervention (40 men and 142 women) compared to those who did not enroll (93 men and 200 women), $\chi^2 = 5.31$, $p < .05$.

Chi-square and independent samples t-tests were conducted to examine differences between participants who participated in the intervention and completed the FU survey ($n = 139$) versus those whom did not complete the FU survey ($n = 37$). The t -test comparing groups on monthly drinking frequency ($M_1 = 3.13$, $SD_1 = 0.92$; $M_2 = 3.54$,

$SD_2 = 0.99$) was found to be statistically significant, $t(173) = -2.39, p < .05$ (Cohen's $d = -0.44$, small effect). The two groups did not differ on age ($M_1 = 19.28, SD_1 = 1.87; M_2 = 19.42, SD_2 = 1.44$), $t(173) = -.41, p = .686$; total depression, anxiety, and stress score ($M_1 = 35.27, SD_1 = 10.15; M_2 = 36.18, SD_2 = 10.94$), $t(167) = -.46, p = .646$; and weekend drinking quantity ($M_1 = 3.98, SD_1 = 3.17; M_2 = 4.89, SD_2 = 3.42$), $t(174) = 0-.53, p = .127$. Levene's test for equality of variance was found to be violated for the analyses examining negative alcohol-related consequences for those who completed FU ($M_1 = 4.52, SD_1 = 6.15$) versus those who did not ($M_2 = 7.95, SD_2 = 10.11$), $F(1, 174) = 7.74, p = .006$. Due to this violated assumption, a t statistic not assuming homogeneity of variance was computed and not found to be statistically significant, $t(43.38) = -.197, p = .056$. Lastly, there was no significant difference in gender composition between the group that completed FU (31 men and 108 women) compared to those who did not complete FU (9 men and 28 women), $\chi^2 = 0.07, p = .826$.

Sample Characteristics and Descriptives

A total of 139 participants completed the baseline survey, brief-ACT intervention, and follow-up survey. Participants were predominantly female (77.7% female and 22.3% male) and ranged from 18 to 36 years old ($M = 19.28, SD = 1.87$). The sample was composed of 79.1% White/Caucasian, 7.2% Black/African-American, 6.5% Asian or Asian American, 6.5% Other, and 0.7% Native Hawaiian or Pacific Islander participants. Additionally, 15.8% of the sample identified as Hispanic. The majority of the sample was in their freshman year (46.0%) with 28.1% sophomore, 13.7% junior, 10.8% senior, and 1.4% in their fifth-year of school. Descriptives for outcome and process variables can be found in Table 1.

Alcohol Use Characteristics of Participants

The sample was comprised of 30.9% of people who endorsed drinking about once per month, 30.2% of people who endorsed drinking two to three times per month, 33.8% of people who endorsed drinking once or twice a week, and 5% of people who endorsed drinking three to four times a week. Also at BL, 47.5% of the sample reported three or more negative alcohol-related consequences in the last four months. The most frequently reported consequences were “neglected your responsibilities” (43.2%), “noticed a change in your personality” (28.1%), “not able to do your homework or study for a test” (24.5%), “had a bad time” (23.0%), and “felt that you needed more alcohol than you used to use in order to get the same effect” (22.3%).

Covariate Selection for Pre- versus Post-treatment Analyses

Potential relevant covariates including time during the school semester that the baseline survey was completed and gender of the participant were chosen based on whether or not they had a significant linear relationship with dependent variables (Tabachnick & Fidell, 2007). Gender was considered as a potential covariate because men consume more alcohol and report more alcohol-related problems compared to women (Substance Abuse and Mental Health Services Administration [SAMHSA], 2005). Time during the school semester that the BL survey was completed was also

Table 1. *Descriptive Statistics of Process and Outcome Variables*

Variable	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>Skewness</i>	<i>Kurtosis</i>
BL Cognitive Fusion	26.07	9.33	7-45	0.12	-0.54
FU Cognitive Fusion	23.76	9.87	7-47	0.19	-0.77
BL RAPI	4.60	6.21	0-36	2.30	6.50
FU RAPI	3.75	8.95	0-68	4.70	26.32
BL Log RAPI	0.53	0.44	0.00-1.57	0.25	-1.01
FU Log RAPI	0.36	0.45	0.00-1.84	1.08	0.41
BL Monthly drinking frequency	3.13	0.92	1-4	0.14	-1.10
FU Monthly drinking frequency	1.72	0.63	1-4	0.48	0.41
BL Weekend drinking quantity	3.98	3.17	1-26	3.03	17.03
FU Weekend drinking quantity	3.43	3.18	1-16	1.66	2.67
BL Log weekend drinking quantity	0.49	0.32	0.00-1.41	-0.10	-0.66
FU Log weekend drinking quantity	0.37	0.37	0.00-1.20	0.39	-1.19
BL Coping motives	9.68	4.72	5-24	1.03	0.06
FU Coping motives	8.06	4.31	5-23	1.61	1.86
BL Log coping motives	0.94	0.20	0.70-1.38	0.45	-0.96
FU Log coping motives	0.86	0.19	0.70-1.38	0.98	0.21
BL FFMQ	123.25	18.81	65-181	-0.07	0.56
FU FFMQ	127.52	20.69	73-188	0.23	0.13

considered as a potential covariate as college students may experience more or less negative alcohol-related consequences or drink more or less based on specific events of the year. Many specific events such as holidays, sporting events, and Spring Break have been significantly positively associated with heavier drinking and more negative alcohol-related consequences (Beets et al., 2009; Del Boca, Darkes, Greenbaum, & Goldman, 2004; Glassman, Dodd, Sheu, Rienzo & Wagenaar, 2010).

Categorical, linear, and curvilinear time variables were examined in order to determine their association with outcome variables. Multiple independent samples *t*-tests were conducted to examine the association between time as a categorical variable (beginning vs. end of the semester based on a median split of the total sample) and outcome variables. There were no significant differences between baseline scores of log-transformed negative alcohol-related consequences for beginning of the semester ($M = 0.55$, $SD = 0.47$) and end of the semester ($M = 0.51$, $SD = 0.40$), $t(137) = 0.58$, $p = .56$; monthly drinking frequency at the beginning of the semester ($M = 3.17$, $SD = 1.0$) and end of the semester ($M = 3.09$, $SD = 0.83$), $t(137) = .48$, $p = .632$; log-transformed weekend drinking quantity at the beginning of the semester ($M = 0.49$, $SD = 0.33$) and end of the semester ($M = 0.48$, $SD = 0.32$), $t(137) = 0.12$, $p = .913$; cognitive fusion at the beginning of the semester ($M = 25.28$, $SD = 9.63$) and end of the semester ($M = 26.76$, $SD = 9.06$), $t(137) = -0.93$, $p = .352$, and dispositional mindfulness at the beginning of the semester ($M = 124.09$, $SD = 20.28$) and end of the semester ($M = 122.51$, $SD = 17.53$), $t(137) = 0.49$, $p = .622$). Results held for raw scores of any log-transformed variables.

Additionally, Pearson product-moment correlations were conducted to examine the associations between time constructed as a linear variable (week in the semester) and outcome variables. There was no statistically significant correlations between time as a linear variable and any outcome variable (r 's = .03 to .07; p 's = .247 - .705).

Linear regression was conducted in order to examine the associations with time constructed as a curvilinear variable. The curvilinear variable was computed by mean centering the linear variable and squaring it. The linear regression included both the linear and curvilinear time variables as independent variables (following Cohen, Cohen, West, & Aiken, 2003). The curvilinear time variable was not statistically significantly associated with any of the outcome variables in linear regression analyses (β 's = -.10 to .15, p 's = .482 to .748).

Lastly, multiple independent sample t -tests were conducted to examine mean differences between outcomes measured at BL based on gender. There were no significant differences between baseline scores of log-transformed negative alcohol-related consequences for men ($M = 0.55$, $SD = 0.42$) and women ($M = 0.52$, $SD = 0.44$), $t(137) = 0.33$, $p = .741$; monthly drinking frequency for men ($M = 3.13$, $SD = 0.76$) and women ($M = 3.13$, $SD = 0.96$), equal variances not assumed, $t(137) = -.00$, $p = .997$; log-transformed weekend drinking quantity for men ($M = 0.48$, $SD = 0.36$) and women ($M = 0.49$, $SD = 0.31$), $t(137) = -.04$, $p = .966$; cognitive fusion for men ($M = 26.35$, $SD = 8.92$) and women ($M = 25.98$, $SD = 9.48$), $t(137) = -.20$, $p = .845$, and dispositional mindfulness for men ($M = 119.79$, $SD = 18.62$) and women ($M = 124.24$, $SD = 18.84$), $t(137) = -.16$, $p = .25$).

Based upon these analyses, time nor gender were not included as a covariate in any of the planned statistical analysis.

Pre-to-Post Changes in Outcomes Variables

Hypotheses 1, 2, and 3 were supported. Paired samples *t*-tests indicated statistically significant reductions in all alcohol outcome variables including negative alcohol-related consequences (log-transformed), monthly drinking frequency, and weekend drinking quantity (log-transformed), with Cohen's *d* effect sizes ranging from .35 to 1.78. There was also statistically significant reductions in cognitive fusion (*d* = 0.24, small effect). Dispositional mindfulness statistically significantly increased (*d* = 0.22, small effect). See Table 2 for results.

Table 2. Results of Paired Samples *t*-tests Comparing Pre-to-Post Changes in Outcome Variables

Outcome	BL		FU		df	<i>t</i>	<i>p</i>	Cohen's <i>d</i> (effect size)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Log RAPI	0.53	0.44	0.36	0.45	138	4.34	<.001***	0.38 (small)
Monthly drinking frequency	3.13	0.92	1.73	0.63	138	19.07	<.001***	1.78 (large)
Log weekend drinking quantity	0.49	0.32	0.37	0.37	138	3.53	<.001***	0.35 (small)
Cognitive fusion	26.07	9.33	23.76	9.87	138	3.32	<.001***	0.24 (small)
Dispositional mindfulness	123.25	18.81	127.52	20.69	138	3.23	<.01**	0.22 (small)

Note. *N* = 139. BL, baseline; FU, follow-up; *M*, mean; *SD*, standard deviation; df, degrees of freedom; *t*, *t* statistic; *p*, significance level; RAPI, Rutgers Alcohol-Problem Index (log-transformed, negative alcohol-related consequences).

*, *p* ≤ .05; **, *p* ≤ .01; ***, *p* ≤ .001.

Exploratory Process Analyses

In order to examine exploratory aim 1, a regressed change approach (Cohen et al., 2003) using a hierarchical linear regression was used to predict each FU drinking outcome (e.g., log-transformed negative alcohol-related consequences, monthly drinking frequency, and log-transformed weekend drinking quantity) while controlling for BL levels of cognitive fusion and the corresponding drinking variables. In those analyses, FU drinking outcomes were the criterion variables. BL drinking outcome and BL cognitive fusion were entered in Step 1 and FU cognitive fusion was entered in Step 2 as predictors. No associations between FU cognitive fusion and any FU drinking outcome were significant (see Table 3).

In order to examine exploratory aim 2, the same regressed change approach using hierarchical linear regression was used to examine associations between changes in dispositional mindfulness and drinking outcomes (e.g., log-transformed negative alcohol-related consequences, monthly drinking frequency, and log-transformed weekend drinking quantity). In those analyses, FU drinking outcome was the criterion variable. BL drinking outcome and BL mindfulness were entered in Step 1 and FU mindfulness was entered in Step 2 as statistical predictors. No associations between FU mindfulness and any FU drinking outcome were significant (see Table 4). Analyses were also run with each individual facet of the FFMQ and none were significantly related to any drinking outcome at FU.

In order to examine exploratory aim 3, the same regressed change approach using hierarchical linear regression was used to examine associations between changes in log-transformed coping motives and drinking outcomes (e.g., log-transformed negative

Table 3. *Regressed Change Analyses in Hierarchical Multiple Regression for Cognitive Fusion and Drinking Outcomes*

Predictor	<i>B</i>	<i>SE B</i>	<i>F</i>	<i>R</i> ²
DV: FU log RAPI				
Step 1			20.68***	.23
BL log RAPI	.48	.08	.46***	
BL CFQ	.00	.00	.06	
Step 2			13.71***	.00
BL log RAPI	.48	.09	.46***	
BL CFQ	.00	.00	.05	
FU CFQ	.00	.00	.02	
DV: FU monthly drinking frequency				
Step 1			14.35***	.17
BL drinking month frequency	.29	.05	.40***	
BL CFQ	.00	.01	-.00	
Step 2			9.51***	.00
BL drinking month frequency	.29	.05	.42***	
BL CFQ	-.00	.01	-.01	
FU CFQ	.00	.01	.01	
DV: FU log weekend drinking quantity				
Step 1			14.56***	.18
BL log weekend drinking quantity	.47	.09	.41***	
BL CFQ	.00	.00	.07	
Step 2			9.65***	.00
BL log weekend drinking quantity	.48	.09	.41***	
BL CFQ	.00	.00	.08	
FU CFQ	.00	.00	-.04	

Note. DV, dependent variable; BL, baseline; FU, follow-up; *B*, unstandardized beta; *SE*, standard error; β , standardized beta; *F*, *F* statistic; *R*², change in variance; RAPI, Rutgers Alcohol-Problem Index (log-transformed, negative alcohol-related consequences); CFQ, Cognitive Fusion Questionnaire (cognitive fusion).

*, $p \leq .05$; **, $p \leq .01$; ***, $p \leq .001$.

alcohol-related consequences, monthly drinking frequency, and log-transformed weekend drinking quantity). In those analyses, the FU drinking outcome was the criterion variable. BL drinking outcome and BL log coping motives were entered in Step 1 and FU coping motive was entered in Step 2 as statistical predictors. The association between FU log coping motives and all FU drinking outcomes were significant and had small effect sizes (semi-partial r^2 s = .10 - .18 small effects; see Table 5).

Table 4. Regressed Change Analyses in Hierarchical Multiple Regression for Mindfulness and Drinking Outcomes

Predictor	<i>B</i>	<i>SE B</i>		<i>F</i>	<i>R</i> ²
DV: FU log RAPI					
Step 1				21.18***	.24
BL log RAPI	.47	.08	.45***		
BL FFMQ	-.00	.00	-.09		
Step 2				14.11***	.00
BL log RAPI	.47	.08	.45***		
BL FFMQ	-.00	.00	-.12		
FU FFMQ	.00	.00	.05		
DV: FU monthly drinking frequency					
Step 1				14.81***	.18
BL drinking month frequency	.28	.05	.41***		
BL FFMQ	-.00	.00	-.07		
Step 2				9.82***	.00
BL drinking month frequency	.28	.05	.40***		
BL FFMQ	-.00	.00	-.06		
FU FFMQ	-.00	.00	-.02		
DV: FU log weekend drinking quantity					
Step 1				16.08***	.19
BL log weekend drinking quantity	.45	.09	.39***		
BL FFMQ	-.00	.00	-.14		
Step 2				10.75***	.00
BL log weekend drinking quantity	.46	.09	.40***		
BL FFMQ	-.00	.00	-.18		
FU FFMQ	.00	.00	.05		

Note. DV, dependent variable; BL, baseline; FU, follow-up; *B*, unstandardized beta; *SE*, standard error; β , standardized beta; *F*, *F* statistic; *R*², change in variance; RAPI, Rutgers Alcohol-Problem Index (log-transformed, negative alcohol-related consequences); FFMQ, Five Factor Mindfulness Questionnaire (mindfulness).

*, $p \leq .05$; **, $p \leq .01$; ***, $p \leq .001$.

Table 5. *Regressed Change Analyses in Hierarchical Multiple Regression for Coping Motives and Drinking Outcomes*

Predictor	<i>B</i>	<i>SE B</i>		<i>F</i>	<i>R</i> ²
DV: FU log RAPI					
Step 1				24.98***	.27
BL log RAPI	.34	.10	.33***		
BL log coping motives	.57	.22	.25**		
Step 2				37.83***	.18
BL log RAPI	.24	.09	.23**		
BL log coping motives	.02	.21	.02		
FU log coping motives	1.27	.19	.54***		
DV: monthly drinking frequency					
Step 1				14.76***	.18
BL monthly drinking frequency	.27	.06	.40***		
BL log coping motives	.21	.26	.07		
Step 2				17.12***	.10
BL monthly drinking frequency	.22	.05	.32***		
BL log coping motives	-.42	.29	-.13		
FU log coping motives	1.27	.31	.39***		
DV: log weekend drinking quantity					
Step 1				16.54***	.20
BL log weekend drinking quantity	.42	.09	.37***		
BL log coping motives	.31	.15	.16*		
Step 2				22.00***	.13
BL log weekend drinking quantity	.35	.09	.31***		
BL log coping motives	-.14	.17	-.07		
FU log coping motives	.87	.17	.45***		

Note. DV, dependent variable; BL, baseline; FU, follow-up; *B*, unstandardized beta; *SE*, standard error; β , standardized beta; *t*, *t* statistic; *p*, significance level; *R*², variance; ΔR^2 , change in variance; RAPI, Rutgers Alcohol-Problem Index (log-transformed, negative alcohol-related consequences).

*, $p \leq .05$; **, $p \leq .01$; ***, $p \leq .001$.

Post-hoc Analyses: Moderators of Pre- and Post-treatment Associations

The interaction between negative alcohol-related consequences and cognitive fusion was explored as ACT process variables theoretically and statistically precedes symptom reduction such as substance use behavior change (e.g., Dalrymple & Herbert, 2007; Forman, 2007; Gifford et al., 2004; Hayes et al., 2012; Kocovski et al., 2009; Zettle & Hayes, 1986). Negative alcohol-related consequences (log-transformed) was chosen as

the outcome variable of interest in line with Logan and Marlatt's (2001) harm reduction approach which targets reduction of consequences associated with the addictive behavior as opposed to complete abstinence from the substance. It was hypothesized that cognitive fusion would statistically significantly moderate the association between negative alcohol-related consequences at BL and FU. Moderation was tested using hierarchical linear regression with interaction effects (Aiken & West, 1991) in SPSS version 20.0 and confidence intervals were obtained from Hayes' (2012) PROCESS macro. The linear effects of cognitive fusion (mean centered) and log-transformed negative alcohol-related consequences (mean centered) were entered on Step 1. The interaction effect, calculated as the product of cognitive fusion and negative alcohol-related consequences was entered in Step 2. The interaction between BL cognitive fusion and BL negative alcohol-related consequences was statistically significant. Results are presented in Table 6 and the significant interaction effect is illustrated in Figure 2.

To further depict the interaction effect, simple regression equations were constructed using ± 1 *SD* from the cognitive fusion mean and the significance of the simple slopes were tested at high (+1 *SD*) and low (-1 *SD*) levels of cognitive fusion to examine associations between BL and FU negative alcohol-related consequences at different levels of cognitive fusion. Simple slope analyses indicated that BL and FU negative alcohol-related consequences were significantly positively associated at 1 *SD* below the mean of cognitive fusion ($\beta = 0.26, p < .05$), significantly positively associated at the mean level of cognitive fusion ($\beta = 0.44, p < .001$), significantly positively associated at 1 *SD* above the mean of cognitive fusion ($\beta = 0.62, p < .001$). Examination of the nature of this interaction (Aiken & West, 1991) indicated that FU negative

Table 6. Results of the Moderated-Regression Analysis Examining the Interaction Effects of BL Log-transformed Negative Alcohol-related Consequences (BL RAPI) and BL Cognitive Fusion (BL CFQ) in Predicting FU Log-transformed Negative Alcohol-related Consequences (FU RAPI)

Step	<i>B</i>	<i>SE B</i>		<i>t</i>	<i>p</i>	<i>R</i> ²	<i>R</i> ²	95% CI
Step 1						.23	.23**	
BL RAPI	.48	.08	.46	5.80	<.001***			
BL CFQ	.00	.00	.06	0.76	.449			
Step 2						.27	.04*	
BL RAPI	.46	.08	.44	5.59	<.001***			
BL CFQ	.00	.00	.06	0.76	.445			
BL RAPI x BL CFQ	.02	.00	.19	2.46	.014*			.0044 - .0358

Note. *N* = 138. DV, dependent variable; BL, baseline; FU, follow-up; *B*, unstandardized beta; *SE*, standard error; β , standardized beta; *t*, *t* statistic; *p*, significance level; *R*², variance; ΔR^2 , change in variance; RAPI, Rutgers Alcohol-Problem Index (log-transformed, negative alcohol-related consequences); CFQ, Cognitive Fusion Questionnaire (cognitive fusion).

Beta values of predictor variables are mean-centered.

*, $p \leq .05$; **, $p \leq .01$; ***, $p \leq .001$.

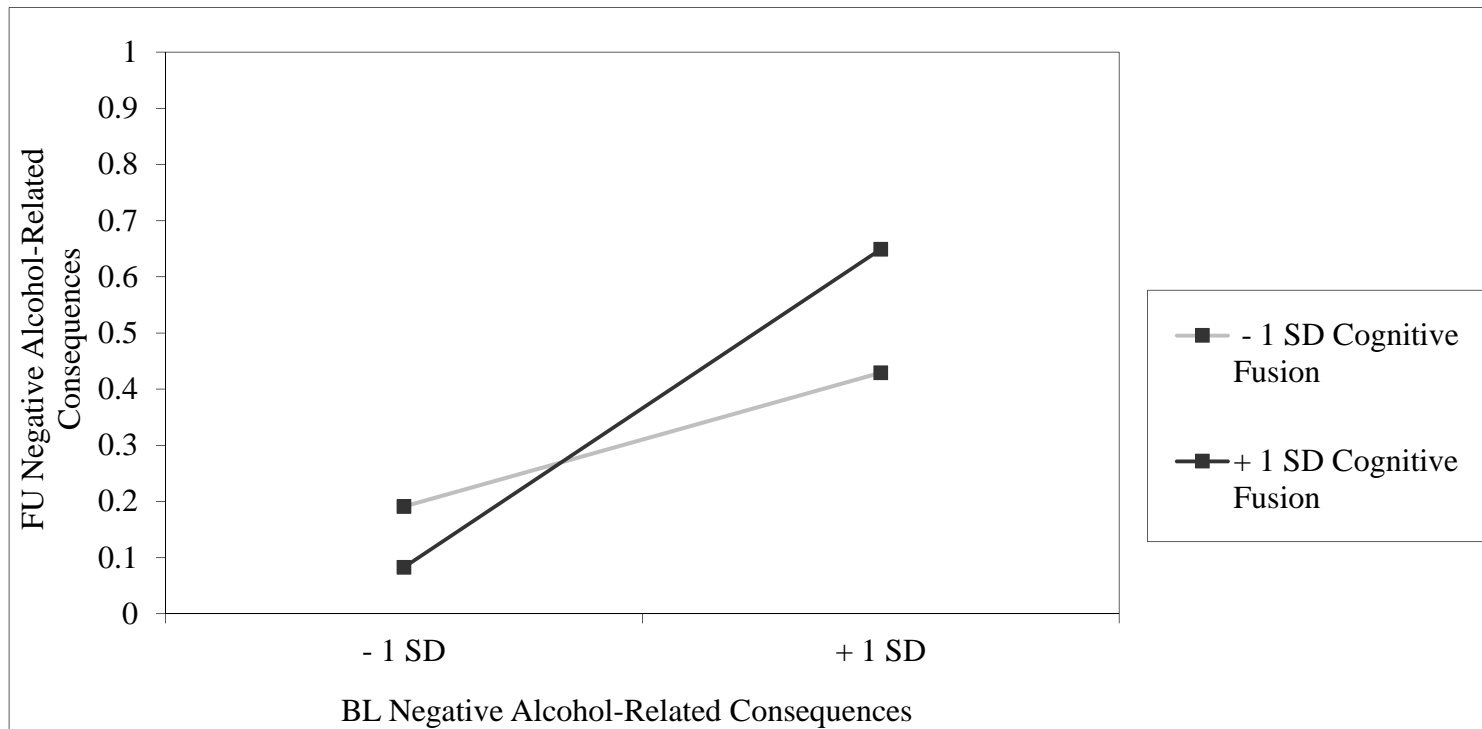


Figure 2. Follow-up (FU) Negative Alcohol-Related Consequences (RAPI) as a Function of Baseline (BL) Alcohol-related Consequences and BL Cognitive Fusion (CFQ), illustrating Step 2 of the Multiple Hierarchical Regression Analysis in Table 2.

alcohol-related consequences were strongly and positively associated with BL negative alcohol-related consequences at high levels of BL cognitive fusion and moderately and positively associated at low levels of BL cognitive fusion. At 1 *SD* above the mean on both BL negative alcohol-related consequences and BL cognitive fusion, an average reduction of .032 log-transformed points at FU negative alcohol-related consequences was observed (from 0.97 to 0.65). At 1 *SD* above the mean on BL negative alcohol-related consequences and 1 *SD* below the mean on BL cognitive fusion, an average reduction of .054 log-transformed points at FU negative alcohol-related consequences was observed (from 0.97 to 0.43).

CHAPTER FOUR

Discussion

Although brief, individual-level interventions for college student drinking reduction that target social and conformity motives for drinking are plentiful and well-established, interventions that target drinking in order to avoid unpleasant internal experiences (i.e., coping motives) via mindfulness and acceptance techniques are just beginning to be examined. Likewise, the mechanisms of such interventions are only recently being explored, with cognitive defusion being one such hypothesized mechanism of change in ACT. The purpose of the current study was to examine whether a single session of ACT may reduce drinking outcomes (e.g., negative alcohol-related consequences, monthly drinking frequency, weekend drinking quantity), cognitive fusion, and dispositional mindfulness. The study also explored the associations between process variables (cognitive fusion, dispositional mindfulness, and coping motives) and these drinking outcomes at FU.

The present study hypothesized that means of all main drinking outcomes (negative alcohol-related consequences, monthly drinking frequency, and weekend drinking quantity) at FU would be statistically significantly reduced compared to mean drinking outcomes measured at BL. Results of the paired samples *t*-tests indicated that there were statistically significant reductions in all drinking outcome variables from BL to FU with small effect sizes for negative alcohol-related consequences (Cohen's $d = 0.38$) and weekend drinking quantity ($d = 0.35$) and large effects for monthly drinking frequency ($d = 1.78$). The sizes of observed effects are consistent with commonly used

brief-interventions identified by NIAAA (2002) (e.g., combination cognitive-behavior skills training with norms clarification and motivational enhancement; brief motivational interventions; alcohol expectancy challenge interventions) that have been associated with reductions in drinking in college student samples. Effect sizes found for the current study are also consistent with those reported in meta-analyses of individual-level brief interventions with within group effect sizes ranging from small to medium for alcohol-related problems and drinking quantity (Carey et al., 2007).

Overall, the current study's findings are also congruent with results from existing mindfulness- and acceptance-based interventions for drinking reduction. Notably, results are consistent with findings from Mermelstein and Garske (2015) who found that a 4-week mindfulness intervention reduced frequency of binge drinking (DDQ-R) and negative alcohol-related consequences (RAPI). However, the present study's results of a paired *t*-test that dispositional mindfulness increased from BL to FU ($d = .22$, small effect), are incongruent with Mermelstein and Garske's (2015) results; Mermelstein and Garske (2015) did not find a significant within-group increases in dispositional mindfulness after their treatment intervention. Notably, the brief-ACT intervention in the current study was substantially shorter than Mermelstein and Garske's (2015) protocol and did not include assigned home practice of mindfulness meditation or follow-up sessions. Furthermore, the present study's within-group reductions of negative alcohol-related consequences ($d = .38$) after a single-session were also consistent with a longer mindfulness-based intervention; Bowen et al. (2009) found a small effect ($d = .22$) on negative alcohol-related consequences after an eight-week Mindfulness Based Relapse Prevention program. Additionally, current findings build on a case study of ACT for

alcohol dependence which reported 100% sobriety from alcohol at 9-month follow-up (Heffner et al., 2003) and are also consistent with emerging evidence that ACT-based interventions are efficacious in reducing consumption of opiates, methamphetamine, marijuana, nicotine and frequency of substance use days in general (Gifford et al., 2004; Hayes et al., 2004; Luoma et al., 2012; Smout et al., 2010; Twohig et al., 2008).

The study further hypothesized that cognitive fusion at FU would be significantly less than cognitive fusion at BL. Results of the paired samples *t*-test indicated a statistically significant reduction in cognitive fusion from BL to FU ($d = 0.24$, small effect). These findings are consistent with Gillanders' et al. (2014) study that directly examined the effect of an ACT intervention on cognitive fusion and also fit with meta-analytic results suggesting that ACT exercises which target cognitive fusion are associated with reductions in theoretically-related correlates of fusion including rumination and worry (Levin et al., 2012). Although it cannot be concluded that the current intervention caused the reduction in cognitive fusion, it bolsters existing evidence consistent with the ACT/RFT model of psychopathology that ACT exercises may be associated with the reductions in this central process variable.

Exploratory regressed change analyses were conducted in order to investigate associations between two variables at FU after controlling for their BL levels. The association between FU cognitive fusion and all drinking outcomes at FU were nonsignificant, indicating that FU cognitive fusion is not associated with FU drinking outcomes. However, as theory and research suggests that cognitive fusion precedes behavior change and reduction in drinking behavior was associated with the present intervention, the present author decided to investigate the moderating role of BL

cognitive fusion on the reduction of negative alcohol-related consequences from BL to FU. In other words, it may be that the intervention may be associated with a different degree of stability of BL and FU negative alcohol-related consequences for low levels of cognitive fusion compared to high levels. Thus, a post-hoc moderation was used to examine the effect of BL level of cognitive fusion on the relationship between BL and FU negative alcohol-related consequences.

The pattern of the interaction suggested that the positive association between BL and FU negative-alcohol related consequences was stronger at high levels of cognitive fusion compared to low levels of cognitive fusion. In essence, this indicates that participants who had high BL levels of cognitive fusion had greater rank order stability (maintenance of an individual's position within the group) of negative alcohol-related consequences and those with lower levels of BL cognitive fusion had less rank order stability of alcohol-related consequences from BL to FU. That negative alcohol-related consequences between BL and FU for individuals with high BL cognitive fusion had more rank order stability than those with low BL cognitive fusion, was at first counterintuitive to the present researcher.

However, two potential reasons may help explain the stronger direct association between BL and FU negative alcohol-related consequences for individuals with high BL cognitive fusion. First, it may be that individuals who were high in BL cognitive fusion were so fused and reactive to internal experiences that attachment to unpleasant thoughts was not modified enough by the intervention. Thus, it is possible that participants high in fusion continued to use alcohol as a coping strategy and continued to experience adverse consequences of their drinking.

Findings from decoupling studies that include interventions that were more than one session in length suggest that additional time spent targeting cognitive fusion may be necessary. Levin, Luoma, & Haeger (2015) define decoupling as reducing the behavioral associations between internal experiences (e.g., thoughts, feelings) and another internal experience or overt behavior (e.g., substance use). As Levin et al. (2015) chronicles, there is support for decoupling in both laboratory-based paradigms and treatment outcome research. For example, findings from Ostafin et al. (2012) indicated that implicit alcohol attitudes (approach vs. avoidance) and drinking behavior could be decoupled. Treatment outcome studies have demonstrated similar findings that negative affect and other substance use behaviors (e.g., alcohol use disorders, drug use disorders, smoking cigarettes) can be decoupled (Witkiewitz & Bowe, 2010; Ekwafi et al., 2013). However, as noted above, all of these decoupling effects were associated with mindfulness- and acceptance- interventions that were longer than one session. Thus, additional sessions or session duration in general may have had a greater effect on weakening urges to drink to cope with negative affect and subsequent within group stability of negative consequences for individuals who were high in cognitive fusion at BL.

An alternative explanation for the greater degree of rank order stability in negative alcohol-related consequences for individuals high in BL cognitive fusion compared to low in BL cognitive fusion may be associated with adverse effects of mindfulness and cognitive defusion exercises. Studies that examine attrition from mindfulness-based treatment studies and reports of adverse effects may shed some light on this paradoxical effect. For example, one study found that brooding and cognitive reactivity predicted dropout from a Mindfulness-Based Cognitive Therapy (MBCT)

intervention designed for participants with recurrent depression who were in remission (Crane & Williams, 2010). Although it is currently unknown how cognitive fusion and cognitive reactivity (as measured by Crane and Williams, 2010) are associated, there is conceptual overlap. Crane and Williams (2010) suggested people with high levels of cognitive reactivity may find it more challenging to engage with MBCT because of the rapid activation of unpleasant cognitions and associated behaviors. In essence, with greater fusion to rapidly activated unpleasant thoughts, the more difficult it may be to respond with adaptive behavior.

Additionally, studies examining adverse event reports after meditation have documented cognitive, affective, and somatic symptoms of anxiety associated with some types of meditation (e.g., transcendental meditation) including relaxation-induced anxiety, increases in tension, and uncomfortable kinesthetic sensations as well as depression, less motivation, boredom, impaired reality testing, feeling “spaced out,” and mild dissociation (Perez-de-Albeniz & Holmes, 2000; Shapiro, 1992). Additionally, some have also suggested caution when using meditation practices with individuals with a trauma-history (e.g., Germer, 2005; Seigel, 2015), “brittle cognitive systems” (e.g., obsessive disorders, Luoma & Hayes, 2003) and psychosis (e.g., Didonna & Gonzalez, 2009). However, while there is preliminary evidence supporting ACT for individuals with positive psychosis-related symptoms (e.g., Bach & Hayes, 2002; Bach, Hayes, & Gallop) and associated reductions in believability of delusions, there remains a paucity of efficacy studies of ACT for posttraumatic stress disorder (see Wasler & Hayes, 2006, for a review of theoretical and practical issues to ACT for PTSD). As the current study did not pre-screen for trauma- or psychosis-related disorders the impact on these variables on

the positive association between BL and FU negative alcohol-related consequences for individuals high in cognitive fusion was not assessed.

Overall, the pattern of findings that individuals with high cognitive fusion at BL show greater rank order stability in their negative alcohol related-consequences suggests that experiential exercises that facilitate defusion should be a more active ingredient in the current intervention. The current intervention used a number of specific exercises identified by Levin et al. (201) that fall within the “cognitive defusion” and “mixed mindfulness” categories. The “*Milk, Milk, Milk*” experiential exercise, used in the present intervention, was the most frequently utilized defusion component identified by Levin et al.’s (2010) meta-analysis of laboratory-based component studies and demonstrated significant medium effect sizes (Hedges $g = .74 - .77$) compared to inactive control conditions for all outcome variables and theoretically specified outcomes. Other “mixed mindfulness” therapeutic metaphors and experiential exercises, that target combinations of psychological flexibility processes simultaneously (acceptance, present moment, defusion, and self as context), were used in the current intervention including *Chocolate Cake*, *Tug-of-War with a Monster*, *Leaves on a Stream*, and mindful eating. Additional specific exercises should facilitate participants’ ability to interact with their thoughts nonliterally, notice and let go of judgment/evaluation, and engage in behavior independent of their thoughts. Metaphors such as *Joe the Bum*, *Thoughts as Images on a Movie Screen*, *Finding a Place to Sit*, and *Passengers on the Bus* may further objectify thoughts (Hayes et al., 1999). Other experiential exercises such as breathing meditation, urge surfing meditation, and writing thought cards (e.g., Luoma & Hayes, 2003) are additional options for targeting cognitive fusion.

Notably, it is also important for there to be space to practice the exercises and process reactions to the exercises embedded within the parameters of the intervention. The Melbourne Academic Mindfulness Interest Group (Allen, Blashki, & Gullone, 2006) suggested that whether the short-term negative reactions to mindfulness practice are processed as learning opportunities and worked through or experiences as adverse events may depend on the skill of the therapist. Thus, it is important that the therapist be adequately trained and embody mindfulness in their professional therapeutic style.

Exploratory autoregressive analyses examining the association between FU dispositional mindfulness and all drinking outcomes at FU after controlling for BL levels of the variables were nonsignificant. Previous findings have suggested a complex relationship between dispositional mindfulness, specific facets of mindfulness, and substance use behaviors, with studies finding both indirect (e.g., negative association between accepting without judgment and acting with awareness with both coping motives and alcohol use in Reynolds et al., 2015; Roos et al., 2015) and direct associations (e.g., positive association between mind/body awareness and alcohol use in Leigh et al., 2005), as well as nonsignificant findings (e.g., mind/body awareness and coping motives in Leigh et al., 2005). As current findings were statistically nonsignificant, it may be that mindfulness itself is not an important predictor in problematic drinking among college student populations. Additionally, it is possible that dispositional mindfulness may be related to another variable, that in turn, may be more directly related to drinking outcomes. For example, changes in dispositional mindfulness may relate to changes in cognitive defusion, which then contributes to changes in negative alcohol-related consequences. As there were only two assessment time points in the present study, this

hypothesis cannot be examined and future research utilizing Kazdin's (2007) recommendations for examining mechanisms of change is warranted.

When examining the association between coping drinking motives and all drinking outcomes at FU, after controlling for BL levels of these variables, log-transformed coping motives were statistically significantly and directly associated with all drinking outcomes and had small effect sizes (semi-partial r^2 s = .10 - .18). Consistent with existing results that coping motives and alcohol outcomes are directly associated (e.g., Carey & Correia, 1997; Ebersole et al., 2012; Park & Levenson, 2002; Rutledge & Sher, 2001), for every one *SD* decrease in coping motives, decreases in drinking outcomes ranged from 0.39 *SD* (weekend drinking quantity) to 0.54 *SD* (negative alcohol-related consequences) in the current study. As coping motives have been found to be significantly positively related to both negative alcohol-related consequences and quantity/frequency (Merill & Read, 2010; Merrill, Wardell, & Read, 2014; Rutledge & Sher, 2010) it follows that alcohol consumption and negative-alcohol related consequences would also diminish. Overall, these findings suggest that this intervention may be associated with reducing some of the most impairing symptoms associated with coping drinking along the alcohol use disorder continuum in college students including risky behavior, poor physical self-care, physiological dependence, and academic/educational impairment. Congruent with ACT theory, it may be that certain processes targeted by ACT, such as experiential avoidance/acceptance and cognitive fusion/defusion, attenuate automatic alcohol coping behavior in response to unpleasant internal experiences. Also consistent with ACT theory, it may be that individuals' greater non-judgmental acceptance of unpleasant internal experiences, willingness to approach

(instead of avoid) unpleasant internal experiences, mindful awareness of thoughts/emotions, and values-driven behavior allow them to have greater distress tolerance, respond more flexibly to unpleasant mental events, and expand their repertoire of adaptive coping strategies for affect regulation.

These data also suggest that drinking coping motives are an important target of intervention to continue to focus on given that the intervention was associated with reductions in drinking outcomes and FU log-transformed coping motives were positively associated with drinking outcomes at FU. This is notable given that the majority of interventions categorized by NIAAA (2002) as Tier 1 interventions for college student drinking reduction focus on social and conformity reasons for drinking. Increased focus on reducing drinking-to-cope with unpleasant experiences is congruent with ACT theory as experiential avoidance only maintains the cycle of suffering and maladaptive coping behaviors.

Although there is preliminary associative evidence that cognitive fusion and coping drinking motives may be variables to target to change drinking behavior, based on the current study's findings, one 60-minute session of ACT-based exercises may not target these variables enough. More intentionally targeting cognitive fusion and coping drinking motives with supplemental exercises and practice, as well as space to process unpleasant reactions to mindfulness practices and meditation, may promote further reductions of negative alcohol-related consequences and other drinking variables. These potential mechanisms of change may be targeted by revising the existing intervention with additional thought defusion exercises and formal or informal mindfulness meditation. This may be achieved by extending the current 60 minute intervention to 90

minutes or adding a booster session. Either approach may offer additional time for formal cognitive defusion exercises and mindfulness practices and/or the assignment of informal practice between the initial and booster sessions.

Limitations and Future Directions

As the present study was a pilot study and did not use an experimental design, reductions in drinking outcomes and cognitive fusion are only associated with the intervention and cannot be linked causally to the intervention. Consistent with the Stage Model of Behavior Therapies Research, in addition to possible adaptations to the current intervention described already, future studies should compare the intervention to a control (e.g., relaxation) and/or other established Tier I interventions for drinking reduction such as BASICS, combination cognitive-behavior skills training with norms clarification and motivational enhancement, or alcohol expectancy challenge interventions. Additionally, future research may test various combinations and sequences of experiential exercises and metaphors from ACT.

Furthermore, as the current study only had two time points (BL and FU), the directionality of the relationship between variables in the exploratory analyses could not be properly assessed. Future research should include additional and longer follow-up time points in order to assess whether the intervention is associated with maintenance of change as well as whether changes in cognitive fusion led to changes in alcohol outcomes, vice versa, or due to changes in some other variable (e.g., using recommendations from Kazdin, 2007). Additionally, as individuals high in cognitive fusion at BL had greater rank order stability between BL and FU negative alcohol related consequences compared to those low in cognitive fusion in BL, further investigation of

effectiveness of interventions with additional exercises targeting cognitive fusion should be conducted.

Conclusion

Despite the aforementioned limitations, this is the first single-session Acceptance and Commitment Therapy intervention that may be associated with reductions in college student drinking behavior and cognitive fusion. As existing NIAAA Tier I interventions address social and conformity motives for drinking, the intervention presented in this study offers an alternative approach to college student drinking reduction by addressing coping motives for drinking. This is especially notable as coping drinking motives are positively associated with important negative consequences affecting college students' ability to succeed in the developmentally challenging academic and social environment. As the intervention was brief and standardized it may be disseminated and/or modified to a group-format easily. Although additional research is needed to replicate and extend these findings, including conducting randomized clinical trials, the present intervention shows promise to be a potentially effective intervention for reducing negative alcohol-related consequences as well as alcohol consumption in college students. Additionally, results contribute to existing research about the theorized role of cognitive fusion as a potential mechanism of change in ACT, as findings suggest that one's level of cognitive fusion is an important factor in the degree of stability in negative alcohol-related consequences from BL to FU time points.

APPENDICES

APPENDIX A

Brief ACT Protocol

1. **Introduction:** To ACT therapist and a chance for the participant to introduce him/herself.
2. **ICF**
 - a. Confidentiality/exceptions to confidentiality
 - b. Audio recording
 - c. Single-session experimental session in which you receive components of a scientifically-based psychotherapy.
 - d. Risks and benefits
 - i. May not receive benefit, technically could be feeling more distressed when leaving the session may not receive benefit, technically could be feeling more distressed when leaving the session.
 - ii. Offer referrals at end
3. **PANAS**
 - a. Have participant complete the PANAS on a computer
4. **What is ACT?**
 - a. ACT considers suffering to be normal. Emotions, even negative ones, are a normal part of life. In fact suffering is connected to how we related and perceive our thoughts and feelings. When we are suffering, we try to rid

ourselves of painful experiences such as anxiety, sadness, negative thoughts, bad memories, etc.

b. Chocolate cake metaphor (Attachment A)

i. Some people respond with avoiding their chocolate cake in different ways

1. Examples: Using a substance, distracting self (cleaning, watching television, studying/working a lot). Give lots of examples to show the participant that avoidance can take many forms.

ii. What is your “chocolate cake”? What types of experiences or feelings have you had that you didn’t like and how did you respond to them?

1. If you are uncomfortable sharing your “chocolate cake” with me, that is okay, just keep it in your mind as we continue.

c. Sometimes this response to uncomfortable feelings or thoughts sensations, - this avoidance – this effort to eliminate the pain becomes a source of pain itself and thus is the problem. So in ACT, we work on viewing thoughts and feelings with a different stance or attitude. The ultimate goal is to help you build a better life based on your values.

5. What will I learn in ACT?

a. ACT is not based on helping you change the frequency you experience unhelpful thoughts or unpleasant feelings (e.g., yellow Jeep), but rather

ACT is about helping you respond to those thoughts and feelings in a more flexible manner.

- b. Emphasize collaboration and ask participant if he/she is willing to do exercises and metaphors together
 - i. If participant is not willing or seems hesitant to do exercise and metaphors together, they will be thanked for their time and participation and informed they still get credit for the in-person study.
- c. Ask participant to repeat the treatment rationale to ensure their understanding.
- d. Minimum threshold of knowledge to move on with protocol:
 - i. Response to uncomfortable feelings or thoughts is the problem, not the uncomfortable feelings or thoughts themselves

6. 10 minutes: Acceptance/Willingness

- a. Transition
 - i. When you were a kid, did you ever play tug-of war? Tug of war metaphor (Attachment B)
 - ii. Bring up current struggle previously named or “chocolate cake” in general if client chooses not to disclose current struggle Tug of War metaphor

7. 10 minutes: Defusion versus Cognitive Fusion

- a. Transition

- i. Monster was not only pulling on rope, but also taunting you and saying mean things
 - ii. Read more into thoughts than we really should
- b. Lemon-lemon-lemon exercise (Attachment C)
- c. Transition:
 - i. Sometimes we read more into our thoughts than is good for us, and try to control them. Not only do we get caught up in our thoughts and take them literally, but we try to suppress or avoid them, too.
- d. Campfire metaphor (Attachment D)

8. 10 minutes: Contact with the present moment/Mindfulness

- a. Transition:
 - i. When you were a kid, did you ever eat warheads?
- b. Lemon Warhead exercise (Attachment E)
 - i. Sugar free candy option if participants needs
- c. Transition:
 - i. Thank for being so involved thus far
 - ii. This next exercise should hopefully be relaxing and is more of a personal, reflective experience
- d. Leaves on a Stream exercise (Attachment F)

9. 10 minutes: Values

- a. Transition:

- i. We've done all of these exercises to turn inwards and become more aware, but not judge our experiences, but what it is service of?
 - ii. Context is doing all of these things to work towards our values
 - iii. Maybe, if we can allow our thoughts to be leaves on the stream, we would have more time to really do what's important to us
- b. Values Notecard exercise (Attachment G)
 - i. How have you been doing at living out your values?

10. 10 minutes: Wrap-up

- a. Making a commitment (Attachment H)
 - i. If you're willing, I'm wondering if you're willing to make a commitment towards living out one of your values?
 - ii. Emphasize the size of the action doesn't matter
 - iii. I'm going to do it with you and I will make a commitment to you as well.
 - 1. I'm going to commit to getting 8 hours of sleep a night because health (physical and emotional) is one of my top values and effects a lot of things in my life
- b. Wrap-up and reactions to the session
 - i. What was today like for you?
 - ii. Favorite part? Least favorite part?
- c. Offer referral to Baylor University Counseling Center

Attachment A

Chocolate cake exercise (Hayes et al., 1999)

The chocolate cake exercise is particularly effective with clients who are struggling to control obsessive thoughts or ruminations.

Therapist: Suppose I tell you right now that I don't want you to think about something. I'm going to tell you very soon. And when I do, don't think it even for a second. Here it comes. Remember, don't think of it. Don't think of . . . warm chocolate cake! You know how it smells when it first comes out of the oven. . Don't think of it! The taste of the chocolate icing when you bite into the first warm piece . . .Don't think of it! As the warm, moist piece crumbles and crumbs fall to the plate . . Don't think of it! It's very important; don't think about any of this!

Most clients get the point immediately and may laugh uncomfortably, nod, or smile. Others may respond by insisting that they did not think about anything. As illustrated in the following dialogue, the therapist can use this exercise to further highlight the futility of control or thought suppression strategies.

Therapist: So could you do it?

Client: Sure.

Therapist: And how did you do it?

Client: I just thought about something else.

Therapist: Ok. And how did you know you did it?

Client: What do you mean?

Therapist: The task was not to think of chocolate cake. So what did you think of?

Client: Driving a racecar.

Therapist: Great. And how did you know that thinking of a racecar was doing what I asked? So that you could report success?

Client: Well I was saying, "Great, I'm thinking of a racecar . . ." (*pauses*)

Therapist: Yes. And continue on. I'm thinking of a racecar and I'm not thinking of...

Client: Chocolate cake.

Therapist: Right. So even when it works, it doesn't.

Client: It's true. I did think of cake, but I pushed it out so fast I almost didn't think of it.

Therapist: And isn't this similar to what you have done with your obsessive thoughts?

Client: I try to push them out of my mind.

Therapist: But see the problem. All you are doing is adding racecars to chocolate cake. You can't 100% subtract chocolate cake deliberately, because to do it deliberately you have to formulate the rule, and then there you are, because the rule contains it. If you are not willing to have it...

Client: You do.

The point can also be made in respect to physical reactions. We might say to the client something like, “Don’t salivate when I ask you to imagine biting into a wedge of lemon. Don’t salivate as you imagine the taste of the juice on your lips and tongue and teeth.” These exercises help the client to make direct contact with the ineffectiveness of conscious purposeful control in these domains.

Attachment B

Tug-of-war with a monster metaphor (Hayes et al., 1999)

The following is a metaphor that was generated by a wonderful and courageous client with agoraphobia as a description of a breakthrough she experienced in ACT. This client abandoned a 20-year struggle with panic and started living instead, doing all the things she had always wanted to do (starting a business, going to school, leaving a destructive marriage) by including anxiety as a legitimate component of these life changes. We call this the *Tug-of-War with a Monster Metaphor*.

Therapist: The situation you are in is like being in a tug-of-war with a monster. It is big, ugly, and very strong. In between you and the monster is a pit, and so far as you can tell it is bottomless. If you lose this tug-of-war, you will fall into this pit and will be destroyed. So you pull and pull, but the harder you pull, the harder the monster pulls and you edge closer and closer to the pit. The hardest thing to see is that our job here is not to win the tug-of-war...our job is to drop the rope.

The drop-the-rope image is a perfect one for the larger agenda of ACT, in which emotional willingness and detachment from thoughts will dominate. Sometimes clients ask, “How do I do that?” after hearing this metaphor. It is best not to answer directly at this point, because that is the whole issue that the therapy addresses. The therapist can instead say something like, “Well, I don’t know exactly how to answer that right now. But the first step is simply to see that you are holding the rope.”

Attachment C

Milk, milk, milk” or “lemon, lemon, lemon” exercise (Hayes et al., 1999; Zettle, 2007)

Having made an initial assault on the limits of language as a stand-in for actual experience, the therapist has to provide the client with the experience of making contact with language stripped of its symbolic functions. The following Milk, milk, milk exercise was first used by Titchener (1916; Hayes et al., 1999, pp. 425) to try to explain his context theory of meaning. It is a playful way to demonstrate that a literal, sequential, analytic, context is required for language stimuli to have any literal (i.e., derived) meaning.

Therapist: Let's do a little exercise. It's an eyes-open one. I'm going to ask you to say a word. Then you tell me what comes to mind. I want you to say the word "milk." Say it once.

Client: Milk.

Therapist: Good. Now what comes to mind when you said that?

Client: I have milk at home in the refrigerator.

Therapist: OK. What else? What shows up when we say "milk"?

Client: I picture it- white, a glass.

Therapist: Good. What else?

Client: I can taste it. Sort of.

Therapist: Exactly. And you can feel what it might feel like to drink a glass? Cold.

Creamy. Coats your mouth. Goes "glug, glug" as you drink it. Right?

Client: Sure.

Therapist: Ok, so let's see if this fits. What shot through your mind were things about actual milk you're your experience with it. All that happened is we made a strange sound-milk-and lots of these things showed up. Notice that there isn't any milk in this room. None at all. But milk was in the room psychologically. You were seeing it, tasting it, feeling it, yet only the word was here. Now, here is the exercise, if you're willing to try it. The exercise is a little silly, so you might feel a little embarrassed doing it, but I am going to do the exercise with you so we can be silly together. What I am going to ask you to do is to say the word, "milk" out loud, rapidly, over and over again, and then notice what happens. Are you willing to try it?

Client: I guess so.

Therapist: OK. Let's do it. Say "milk" over and over again. *(Therapist and client say the word for 1 to 2 minutes, with the therapist periodically encouraging the client to keep it going, to keep saying it out loud, or to go faster).*

Therapist: Ok, now stop. Where is the milk?

Client: Gone *(laughs)*.

Therapist: Did you notice what happened to the psychological aspects of milk that were here a few minutes ago?

Client: After about 40 times they disappeared. All I could hear was the sound. It sounded very strange-in fact; I had a funny feeling that I didn't even know what word I was saying for a few moments. It sounded more like a bird sound than a word.

Therapist: Right. The creamy, cold, gluggy stuff just goes away. The first time you said it, it was as if milk were actually here, in the room. But all that really happened was that you said a word. The first time you said it, it was really meaningful, it was almost solid. But when you said it again and again and again, you began to lose that meaning and the words began to be just a sound.

Client: That's what happened.

Therapist: Well, when you say things to yourself, in addition to any meaning sustained by the relation between those words and other things, isn't it also true that these words are just words? The words are just smoke. There isn't anything solid in them.

This exercise demonstrates quite quickly that although literal meaning dominates in language, it is not hard to establish contexts in which literal meaning quickly weakens and almost disappears. To many "milk" is a very odd sound, considered (as it almost never is) simply as a sound. It has a funny quality to it, reminding people of sounds made by birds or other animals. These direct properties are so glossed over by its functional symbolic properties, that it is often a revelation to hear-just to hear-"milk," perhaps for the first time since early childhood. This does not mean that milk has lost its literal meaning. Clients still have milk and that mammary secretions of cows in an equivalence

class, though it may have loosened somewhat. What has happened is that the transfer of stimulus functions through that equivalence class has been greatly weakened.

Attachment D

Campfire metaphor (Daghighi, 2011)

This metaphor is used to illustrate the “unworkability” of trying to “fix” (e.g. reduce, remove, suppress or change the form of) difficult “automatic” thoughts and emotions, by “adding” new thoughts when they appear in our “experiential window”. (as when clients try to "solve" these internal experiences with self-debating, or when clients are fused with their thoughts).

This is a heavy tested metaphor, rated as “successful”. Change the words, or explanation procedure, as needed, when using this metaphor on your own.

Challenge: Extinguishing the campfire (without water). How?

Imagine that you were at a campsite with a campfire. You wanted to put out the campfire, but you were all alone, and there was no water anywhere to put out or extinguish the campfire – only firewood’s left at the campsite.

In the absence of using water what other ways could this campfire be extinguished? You only had firewood to "use" on the campfire, but that would certainly work in the opposite direction than what you wanted (to put out the campfire). Thus, you would not use it as a way of putting out the fire.

The single way to “put out” the campfire would be “do nothing”, but to let it “die out” on its own, as time goes by. It would be counterproductive to use the left-over firewood on the campfire, as it would only make the fire last longer, and turn into a bigger campfire (further fuel the fire). This particular setting looks a lot like when we experience difficult thoughts and emotions.

The campfire can be likened to the difficult thoughts or feelings that's constantly recurring in our minds. And the leftover firewood are the thoughts we have, or get (e.g. trying to think in other ways, suppressing or condemning the difficult thoughts and emotions), when we experience these difficulties.

Our “automatic” instinct tell us that we should try to “fix” or solve these difficult thoughts and emotions, by adding on more thoughts (firewood), on those difficult thoughts and emotions (the campfire).

But we cannot see, or experience, that this type of “coping” (or problem solving-strategy), often actually prolong the experienced difficulties we try to get rid of experientially, and works the other way than we intended (to put out the campfire). We do not see that we are trying to “put out” these difficult experiences by “adding on more firewood”.

If we "add" more wood (negative or positive thoughts) to the campfire, it only makes the campfire more intense, warmer and enduring. Even if that is not what we thought it would do. You tend to get more fire by putting on more wood on a campfire. The same may be true of trying to “fix” difficult automatic thoughts and emotions, by adding new thoughts on them (instead of just observing them), when we experience them.

So the solution may be to just safely observe the campfire, its warmth, color, size and other qualities, and after a while it may be extinguished by itself, we may just observe it, instead of trying to “to something” with it (in the same way we use mindfulness to observe difficult internal experiences).

This metaphor is a nice defusion ‘tactic’, and it helps to illustrate the metaphor on a drawing board, drawing the campfire, the firewood, and explain how the firewood are equal to thoughts (and how we are prone to use firewood to put out the fire), as the campfire is equal to automatic negative thoughts and feelings that we may experience from time to time.

Attachment E

Eating mindfully (Hayes, 2005)

(Ask patient to practice either observing or describing with eating candy (or a raisin, other small item of food) for about five minutes.

So rather than the focus being on breathing, we will ask you to focus your attention on what it is like to be tasting this, by either observing or describing your experience in the moment, what it is like to have the candy in your mouth. As with sitting mindfulness, if you find your mind wandering, as minds often do, just acknowledge that your mind has wandered and bring your attention back to the experiences that you are having with the candy- it's shape, texture, flavor, and your responses- again and again and again.

Attachment F

Leaves on a stream (Hayes et al., 1999; pp. 158-162)

This is a mindfulness exercise where the patient is guided to place thoughts on leaves as they float by on a gentle stream. It is generally done with eyes closed. Have the patient imagine sitting next to a stream, and gently placing one thought after another on leaves as they float by. The key is to observe thinking as an ongoing process.

Attachment G

Values clarification notecard exercise

This exercise asks patients to identify and write down his/her top five-ten values on a notecard. The patient is asked to look at his/her values and rank order the importance of each value, ultimately determining his/her primary value. A conversation ensues and the therapist and patient explore what the process was like and how easy and/or difficult it was.

Attachment H

Committed Action (Hayes, 2005)

Like bold moves, committed actions show us that we are living our values.

Committed actions are the everyday choices and decisions we make about what we do.

They are the actions that show us on a daily basis how we are living our values.

Value	Committed Action

APPENDIX B

Questionnaires

Demographics

What is your gender?

- ☐ Male
- ☐ Female

What is your age?

What is your race?

- ☐ Black or African-American
- ☐ White or Caucasian
- ☐ American Indian or Alaskan Native
- ☐ Asian or Asian-American
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other _____

What is your ethnicity?

- ☐ Hispanic
- ☐ Non-Hispanic

What year are you in school?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Fifth-year
- ☐ Graduate student

What is your current relationship status?

- ☐ Single, not dating
- ☐ Single, in a casual relationship
- ☐ Single, in a serious relationship
- ☐ Engaged to be married
- ☐ Married, living with spouse
- ☐ Married, geographically separated
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

Do you have children?

- ☐ Yes
- ☐ No

Are you currently working?

- ☐ No
- ☐ Part-time
- ☐ Full-time

What is your current living situation?

- ☐ I live by myself
- ☐ I live with a roommate
- ☐ I live with a significant other
- ☐ I live with my family

PANAS

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Cheerful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgusted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bashful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sluggish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Daring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surprised	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scornful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delighted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fearless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgusted with self	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONTINUED: This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amazed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shaky	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Timid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bold	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONTINUED: This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Joyful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lonely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleepy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At ease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drowsy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONTINUED: This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Angry at self	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Downhearted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sheepish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blameworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frightened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Astonished	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loathing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concentrating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dissatisfied with self	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

DDQ

INSTRUCTIONS FOR RECORDING DRINKING DURING A TYPICAL WEEK

IN THE CALENDAR BELOW, PLEASE FILL-IN YOUR DRINKING RATE AND TIME DRINKING DURING A TYPICAL WEEK IN THE LAST 30 DAYS.

First, think of a typical week in the last 30 days. (Where did you live? What were your regular weekly activities? Where you working or going to school? Etc.) Try to remember as accurately as you can, how much and for how long you typically drank in a week during that one month period?

For each day of the week in the calendar below, fill in the number of standard drinks typically consumed on that day in the upper box and the typical number of hours you drank that day in the lower box.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of Drinks							
Number of Hours Drinking							

INSTRUCTIONS FOR RECORDING DRINKING FOR YOUR HEAVIEST DRINKING WEEK

IN THE CALENDAR BELOW, PLEASE FILL-IN YOUR DRINKING RATE AND TIME DRINKING DURING YOUR HEAVIEST DRINKING WEEK IN THE LAST 30 DAYS.

First, think of your heaviest drinking week in the last 30 days. (Where did you live? What were your regular weekly activities? Where you working or going to school? Etc.) Try to remember as accurately as you can, how much and for how long did you drink during your heaviest drinking week in that one month period?

For each day of the week in the calendar below, fill in the number of standard drinks consumed on that day in the upper box and the number of hours you drank that day in the lower box.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of Drinks							
Number of Hours Drinking							

STANDARD DRINK CONVERSION

When asked how much you drink in the following questions use this chart.

ONE STANDARD DRINK IS EQUAL TO:



Standard American BEER 12 oz. Can, Bottle or Glass
(3-5% alcohol)

Microbrew or European BEER 1/2 of a 12 oz. Can or Bottle
(8%-12% alcohol)



WINE (12 – 17% alcohol) 4 oz. Glass

WINE Cooler 10 oz. Bottle



HARD LIQUOR 1-1/2 oz. or One Standard Shot
(80-proof, 40% alcohol)

HARD LIQUOR 1 oz.
(100-proof, 50% alcohol)



WINE: 1 Bottle

25 oz. (12 – 17% alcohol) = 5 standard drinks

40 oz. (12 – 17% alcohol) = 8 standard drinks



HARD LIQUOR: 1 Bottle

12 oz. = 8 standard drinks

25 oz. = 17 standard drinks

40 oz. = 27 standard drinks

How often did you drink during the last month? (select one)

- ☐ I did not drink at all.
- ☐ About once a month.
- ☐ Two to three times a month.
- ☐ Once or twice a week.
- ☐ Three to four times a week.
- ☐ Nearly every day.
- ☐ Once a day or more.

Think of a typical weekend evening (Friday or Saturday) during the last month.
How much did you drink on that evening? (select one)

- | | | |
|---------------------------------|---------------------------------|------------------------------------|
| <input type="radio"/> 0 drinks | <input type="radio"/> 11 drinks | <input type="radio"/> 21 drinks |
| <input type="radio"/> 1 drinks | <input type="radio"/> 12 drinks | <input type="radio"/> 22 drinks |
| <input type="radio"/> 2 drinks | <input type="radio"/> 13 drinks | <input type="radio"/> 23 drinks |
| <input type="radio"/> 3 drinks | <input type="radio"/> 14 drinks | <input type="radio"/> 24 drinks |
| <input type="radio"/> 4 drinks | <input type="radio"/> 15 drinks | <input type="radio"/> 25 drinks |
| <input type="radio"/> 5 drinks | <input type="radio"/> 16 drinks | <input type="radio"/> 26 drinks |
| <input type="radio"/> 6 drinks | <input type="radio"/> 17 drinks | <input type="radio"/> 27 drinks |
| <input type="radio"/> 7 drinks | <input type="radio"/> 18 drinks | <input type="radio"/> 28 drinks |
| <input type="radio"/> 8 drinks | <input type="radio"/> 19 drinks | <input type="radio"/> 29 drinks |
| <input type="radio"/> 9 drinks | <input type="radio"/> 20 drinks | <input type="radio"/> 30 drinks |
| <input type="radio"/> 10 drinks | | <input type="radio"/> More than 30 |

Think of the occasion (any day of the week) you drank the most during the last month.
How much did you drink on that evening? (select one)

- | | | |
|---------------------------------|---------------------------------|------------------------------------|
| <input type="radio"/> 0 drinks | <input type="radio"/> 11 drinks | <input type="radio"/> 21 drinks |
| <input type="radio"/> 1 drinks | <input type="radio"/> 12 drinks | <input type="radio"/> 22 drinks |
| <input type="radio"/> 2 drinks | <input type="radio"/> 13 drinks | <input type="radio"/> 23 drinks |
| <input type="radio"/> 3 drinks | <input type="radio"/> 14 drinks | <input type="radio"/> 24 drinks |
| <input type="radio"/> 4 drinks | <input type="radio"/> 15 drinks | <input type="radio"/> 25 drinks |
| <input type="radio"/> 5 drinks | <input type="radio"/> 16 drinks | <input type="radio"/> 26 drinks |
| <input type="radio"/> 6 drinks | <input type="radio"/> 17 drinks | <input type="radio"/> 27 drinks |
| <input type="radio"/> 7 drinks | <input type="radio"/> 18 drinks | <input type="radio"/> 28 drinks |
| <input type="radio"/> 8 drinks | <input type="radio"/> 19 drinks | <input type="radio"/> 29 drinks |
| <input type="radio"/> 9 drinks | <input type="radio"/> 20 drinks | <input type="radio"/> 30 drinks |
| <input type="radio"/> 10 drinks | | <input type="radio"/> More than 30 |

DMQ-R

INSTRUCTIONS: The following are a list of reasons people sometimes give for drinking alcohol. Thinking of all the times you drink, how often would you say that you drink for each of the following reasons?

	Almost never/ Never	Some of the time	Half of the time	Most of the time	Almost always/ Always
To forget your worries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because your friends pressure you to drink.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it helps you enjoy a party.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it helps you when you feel depressed or nervous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be sociable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To cheer up when you are in a bad mood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because you like the feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
So that others won't kid you about not drinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it's exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To get high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it makes social gatherings more fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To fit in with a group you like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it gives you a pleasant feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it improves parties and celebrations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because you feel more self-confident and sure of yourself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To celebrate a special occasion with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To forget about your problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it's fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be liked.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
So you won't feel left out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

RAPI

During the last 4 months, how many times did the following things happen to you while you were drinking alcohol or because of your alcohol use?

	0	1-2	3-5	6-10	>10
Not able to do your homework or study for a test.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Got into fights, acted badly, or did mean things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Missed out in other things because you spent too much money on alcohol.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Went to work or school high or drunk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caused shame or embarrassment to someone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neglected your responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relatives avoided you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you needed more alcohol than you used to use in order to get the same effect.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tried to control your drinking by trying to drink only at certain times of the day or in certain places.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had withdrawal symptoms (i.e. felt sick because you stopped or cut down on drinking).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noticed a change in your personality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you had a problem with alcohol.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Missed a day (or part of a day) of school or work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tried to cut down or quit drinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suddenly found yourself in a place that you could not remember getting to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Passed out or fainted suddenly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had a fight, argument, or bad feelings with a friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had a fight, argument, or bad feelings with a family member.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kept drinking when you promised yourself not to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt you were going crazy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had a bad time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt psychologically or physiologically dependent on alcohol.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was told by a friend or neighbor to stop or cut down drinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Binge Drinking Item

In the two last weeks, how often have you consumed...

men: 5 or more drinks in about two hours

women: 4 or more drinks in about two hours

Please enter a number below: _____

CFQ

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

	1 never true	2 very seldom true	3 seldom true	4 someti mes true	5 frequent ly true	6 almos t always true	7 always true
My thoughts cause me distress or emotional pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get so caught up in my thoughts that I am unable to do the things that I most want to do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even when I am having distressing thoughts, I know that they may become less important eventually	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I over-analyse situations to the point where it's unhelpful to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I struggle with my thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even when I'm having upsetting thoughts, I can see that those thoughts may not be literally true	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get upset with myself for having certain thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need to control the thoughts that come into my head	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to view my thoughts from a different perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to get very entangled in my thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to react very strongly to my thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Its possible for me to have negative thoughts about myself and still know that I am an OK person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

	Never or Very Rarely True	Rarely True	Sometimes True	Often True	Very Often or Always True
When I'm walking, I deliberately notice the sensations of my body moving.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm good at finding words to describe my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I criticize myself for having irrational or inappropriate emotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I perceive my feelings and emotions without having to react to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I do things, my mind wanders off and I'm easily distracted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I take a shower or bath, I stay alert to the sensations of water on my body.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can easily put my beliefs, opinions, and expectations into words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I watch my feelings without getting lost in them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself I shouldn't be feeling the way I'm feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONTINUED: Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

	Never or Very Rarely True	Rarely True	Sometimes True	Often True	Very Often or Always True
I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's hard for me to find the words to describe what I'm thinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am easily distracted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to sensations, such as the wind in my hair or sun on my face.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have trouble thinking of the right words to express how I feel about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make judgments about whether my thoughts are good or bad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it difficult to stay focused on what's happening in the present.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONTINUED: Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

	Never or Very Rarely True	Rarely True	Sometimes True	Often True	Very Often or Always True
In difficult situations, I can pause without immediately reacting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It seems I am "running on automatic" without much awareness of what I'm doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have distressing thoughts or images, I feel calm soon after.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that I shouldn't be thinking the way I'm thinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I notice the smells and aromas of things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even when I'm feeling terribly upset, I can find a way to put it into words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rush through activities without being really attentive to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have distressing thoughts or images I am able just to notice them without reacting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think some of my emotions are bad or inappropriate and I shouldn't feel them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CONTINUED: Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

	Never or Very Rarely True	Rarely True	Somet imes True	Often True	Very Often or Always True
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My natural tendency is to put my experiences into words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have distressing thoughts or images, I just notice them and let them go.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do jobs or tasks automatically without being aware of what I'm doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to how my emotions affect my thoughts and behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can usually describe how I feel at the moment in considerable detail.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find myself doing things without paying attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I disapprove of myself when I have irrational ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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