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Does Alcoholics Anonymous Participation Decrease Learned Helplessness and Increase Self- efficacy?

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Philadelphia College of Osteopathic Medicine

Department of Psychology

DOES ALCOHOLICS ANONYMOUS PARTICIPATION DECREASE
LEARNED HELPLESSNESS AND INCREASE SELF-EFFICACY?

By Philip John Pellegrino

Submitted in Partial Fulfillment of the Requirements of the Degree of

Doctor of Psychology

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DEPARTMENT OF PSYCHOLOGY**

Dissertation Approval

This is to certify that the thesis presented to us by Philip Pellegrino
on the 4th day of June, 2008, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

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Abstract

Alcoholics Anonymous (AA) has long been the major treatment of choice in the United States for individuals with alcohol related problems. Research on AA has had methodological problems and there is no clear evidence that AA in and of itself is effective in treating alcohol problems. Treatment studies on alcohol and substance users have found that abstinence self-efficacy and approach coping skills have been related to improved drinking outcomes. Also, depression and alcohol problems have been shown to be highly correlated with each other. Therefore, this study examined the relationship between participation in AA and improvements in abstinence self-efficacy, learned helplessness, and depression. One hundred and four individuals who enrolled in inpatient treatment for alcohol dependence were assessed at admission for depression, self-efficacy, learned helplessness, and alcohol-related problems. These were also assessed at end of treatment and 2 month follow-up along with participation in AA. Minimal findings were found for the impact of AA on any psychosocial variables.

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Chapter 1

*Introduction**Statement of the Problem*

Substance use problems and disorders have a significant impact on society, families, and the health care system. As a result, the effective treatment for these problems is important for the individual, society, and the family and friends of individuals with substance use disorders. Treatment for substance use disorders has been dominated by 12-step methodology, which has its origins in Alcoholics Anonymous (AA). However, the focus of treatment has transitioned in the past decade to behavioral, motivational, and pharmacological approaches. Behavioral and motivational approaches emphasize the role of self-efficacy in the process of substance use treatment and continued abstinence or the reduction of use. The theoretical background of these approaches suggests that individuals who reduce their substance use or quit using altogether have high self-efficacy. Individuals who have success in treatment are able to live life without the substance and not use the substance during high-risk situations.

Behavioral approaches also emphasize the role of learned helplessness in perpetuating the cycle of substance use. In general, learned helplessness is the perception of little or no control over a situation and is marked by distorted attributions. Learned helplessness for substance use disorders is an individual's belief that their substance use is out of their control and that they will always have problems with substance use. Paradoxically, the 12-step and disease model approaches suggest that individuals with high self-efficacy are more at risk for a return to use of the substance.

These models further stress the importance of an individual being powerless and unable to control their use of substances. Twelve-step models also propose that individuals with low self-efficacy will avoid risky situations and thereby remain abstinent.

Research on the relationship between self-efficacy and reduction of alcohol use has been mixed, but generally points to the importance of individuals who are in treatment to develop a strong sense of abstinence self-efficacy. The results of the available research may vary due to the use of different populations, different measures, different treatment modalities, and different purposes of the studies. This analysis will attempt to further clarify the relationship between abstinence self-efficacy, learned helplessness, depression, and participation in 12-step treatment.

Purpose of the Study

This study will investigate if learned helplessness, abstinence self-efficacy, and depression are related to an individual's level of participation in 12-step groups and practices and if changes in these factors are related to increased 12-step participation in a group of individuals diagnosed with alcohol dependence.

Blueprint of the Literature Review

This paper first covers the influence of alcohol use on society and how alcohol problems are defined. The numerous theories of alcoholism and addiction will be reviewed with a focus on moral, disease, social learning, and harm reduction approaches to substance and alcohol use. Specific emphasis is placed on social learning theory and the development of the concept of self-efficacy (Bandura, 1977). Social

learning theory and self-efficacy have partially influenced the development of Marlatt and Gordon's (1985) relapse prevention model of substance use and Miller and Rollnick's (2002) motivational interviewing approaches to treating alcoholism and other substance use disorders.

Review of the Literature

The use of alcohol in the United States is far more socially acceptable when compared to the use of other substances. However, alcohol use remains a problem for a significant portion of the population despite its social acceptability and age-stipulated legality. According to the Substance Abuse and Mental Health Services Administration (SAMHSA; 2006), 16 million individuals over the age of 12 engaged in heavy drinking in 2005. Heavy drinking is defined by SAMHSA as five or more drinks on five occasions in a period of 30 days. It is further estimated that 126 million individuals over the age of 12 have at least one drink in a 30-day period. White males appear to be the most likely to be engaging in alcohol use, while Asian females are least likely to use alcohol (SAMHSA). The costs and consequences of alcohol use not only influence society, but impact individuals, families, and local communities (Gmel & Rehm, 2003).

Treatment for problems that result from alcohol use has become an integral part of reducing the costs accrued by alcohol use and the resulting consequences. The most prevalent treatment philosophy in the United States today is the 12-step philosophy that grew out of Alcoholics Anonymous (AA) (Peele, Bufe, & Brodsky, 2000). AA remains one of the largest support groups for individuals with alcohol problems outside of formal treatment. Many believe that long-term participation in AA groups is necessary

for continued abstinence amongst individuals with alcohol use problems (Moos & Moos, 2004). However, studies on the effectiveness of AA in treating alcoholics have been difficult to conduct due to the voluntary nature of AA. Similarly, the mechanism through which AA may be helpful for participants is unknown (Peele, et al.; Tonigan, Toscova, & Miller, 1996).

The current study examines cognitive and psychosocial factors that contribute to participation in AA or change as the result of participation in AA. First, the effects of alcohol on society and the definitions of alcohol use problems will be reviewed. Then the various theories to explain the development and treatment of alcohol use problems and the current research on cognitive and emotional factors that influence treatment outcomes, with a focus on AA, will be discussed.

The Impact of Alcohol Use Problems

Problematic use of alcohol has had a detrimental impact on many areas of society. Health problems, financial problems, employment problems, and personal and family problems have all been demonstrated by the current literature to be related to, although not caused by, alcohol use (Gmel & Rehm, 2003). In some cases, the aforementioned problems may trigger increased use of alcohol. Harwood (2000) estimates that alcohol use costs the United States approximately \$97.7 billion a year. The majority of this cost translates to loss of economic productivity, health problems and injuries, as well as crime. Absenteeism and decreased performance at work appear to be contributing to economic loss in the work place, along with missing work due to injuries. Aggression and violence resulting from alcohol use has an impact on families

and the safety of communities and takes up valuable man hours from law enforcement (Gmel & Rehm). Ironically, according to the Diagnostic and Statistical Manual of Mental Disorders-IV Text Revision (*DSM-IV-TR*; American Psychiatric Association [APA], 2000), these are the same problems that need to accompany alcohol use in order for an individual to meet criteria for an alcohol use disorder.

Definitions of Alcohol Use Problems

There are three primary terms used today to categorize alcohol use problems: *alcohol abuse* and *drug dependence* are the two terms provided by the *DSM-IV-TR* (APA, 2000) and are used by clinicians to identify individuals with alcohol use problems. The third term, *alcoholism*, comes from the National Council on Alcohol and Drug Dependence (NCADD, 1990).

Alcohol abuse. According to the *DSM-IV-TR* (APA, 2000), alcohol abuse is meant to be a less severe version of alcohol use problems in comparison to alcohol dependence. The *DSM-IV-TR* defines alcohol abuse as a pattern of use within a previous 12-month period that results in one or more symptoms that influence an individual's functioning. These symptoms include problems with social functioning, legal difficulties, loss of employment activities, and the engagement in hazardous behaviors as the result of alcohol use. Therefore, an individual who misses work 1 day per year because of alcohol use would meet criteria for alcohol abuse.

Alcohol dependence. Alcohol dependence is characterized as a more severe form of disorder than abuse. The criteria for alcohol dependence include withdrawal and tolerance. Withdrawal from alcohol use involves multiple physical symptoms that

result from cessation of alcohol use. These physical symptoms include anxiety, nausea, insomnia, increased autonomic activity, and psychomotor agitation. Tolerance involves the need for an increased use of the substance to achieve previous levels of intoxication (APA, 2000). Additionally, alcohol dependence involves use despite negative consequences and increased amount of effort to obtain substances. These symptoms appear to be similar to the problems outlined in alcohol abuse by the *DSM-IV-TR*. In other words, if somebody is spending a significant amount of time to obtain and use a substance despite negative consequences, they are likely to be experiencing the consequences outlined in alcohol abuse. Some research has suggested that there is not a strong qualitative distinction between drug dependence and drug abuse and that clinicians would be better off using continuous measures when measuring severity of drug or alcohol problems (Newcomb, Galaif, & Locke, 2001).

Alcoholism. The NCADD definition of alcoholism does not stipulate criteria that an individual must meet, but instead explains alcoholism in terms of etiology, presentation, and course. Their definition is as follows:

“A primary chronic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. The disease is often progressive and fatal. It is characterized by continuous or periodic impaired control over drinking, preoccupation with the drug alcohol, use of alcohol despite adverse consequences and distortions in thinking, most often denial.”

This varies from the criteria stipulated by the *DSM-IV-TR* (APA, 2000). The NCADD definition specifically states that alcoholism is a disease, worsens over time, and becomes fatal. This definition is similar to the *DSM-IV-TR* definition of alcohol

dependence in the mentioning of use despite hazardous or negative consequences. However, the NCADD definition states that alcoholics have distorted thinking that is characterized by denial. According to this definition, if an individual admits they are an alcoholic, they are no longer in denial and thus no longer an alcoholic. The vagueness of the time periods stated in this definition is also confusing. According to the NCADD definition, alcohol use can either be continuous or periodic use, which covers any type of use during any period of time. In the *DSM-IV-TR* definitions, the focus is on the consequences and effects of use and not the time period (Rotgers & Davis, 2006).

As can be seen from looking at these definitions, there is no precise or exact definition of alcoholism or alcohol problems. Currently, there are multiple models that attempt to explain the etiology for alcohol problems and the appropriate interventions. Due to the focus of this study on AA attendance, it is important to distinguish what models and approaches are incorporated into 12-step groups.

Models and Explanations for Alcohol Use Disorders

The moral model. The moral model states that individuals who engage in problematic alcohol use are deficient in morality, engage in sin, and possess a weak character (Brickman et al., 1992). This model views the problem of alcohol use from the perspective that there is something wrong with the individual's character and that the individual has a personal choice to use substances. For the individual to stop the use of alcohol, they need to make changes in their character and to become responsible for their problem. Proponents of this model explain that individuals choose to use drugs or alcohol and the only method to stop their use is coercion and punishment (Miller &

Kurtz, 1994). This model is also similar to the characterological model (Hester & Miller, 2003).

The spiritual model. The spiritual model is based on early views endorsed by Alcoholics Anonymous (Miller & Kurtz, 1994). Individuals with alcohol problems are believed to need help from a higher power to overcome their struggle with alcohol. Therefore, individuals with alcohol problems are believed to be unable to solve their difficulties alone and require some type of spiritual guidance (Hester & Miller, 2003).

The temperance model. This model of alcohol use believes that alcohol is too dangerous to be used in moderation. Therefore, complete prohibition of the drug is needed to cause the least amount of damage. Unlike other models of alcohol problems, this model blames alcohol as the major problem and not the individual or societal circumstances (Hester & Miller, 2003).

The disease/biological model. The disease model takes a biomedical approach that implies the individual suffers from a disease of the brain that causes the individual to be unable to control their drinking once they begin to drink (Brickman et al., 1992; Miller & Kurtz, 1994). This model states that individuals have a predisposition to develop the disease of alcoholism, and if they begin to use alcohol they will automatically develop alcoholism. Therefore, an individual is not held responsible for the development of problems; the problem is viewed as something outside the individual's control (Miller & Kurtz). The individual is responsible, according to this model, for seeking help and treatment for the problem despite the aforementioned internal source of the pathology. The solution to the problem is for the individual to remain abstinent and to never take another drink of alcohol.

The 12-step philosophy of AA has been confused with the disease model due to the focus on the individual being powerless over their use of alcohol (Miller & Kurtz, 1994). The original philosophy of AA is based on spiritual principles and living a way of life that requires sobriety. This philosophy does not discuss disease as a major etiology of alcoholism. However, modern treatment programs based on 12-step principles incorporate portions of the disease model into their treatment. This is also seen in some modern 12-step support groups (Brickman et al., 1992).

The sociocultural model. The sociocultural model has some similarities to the temperance model. They both espouse the idea that the availability of alcohol within society will lead to more problems with alcohol. However, the sociocultural model also takes into account the cultural role of alcohol, as well as the environments where alcohol is consumed. According to the sociocultural model, the solution to alcohol problems is to change the role that alcohol plays in society, as well as laws that regulate the availability of alcohol. A related model is the systems model. Here the impact of an individual's alcohol use is seen as being part of a system. The individual and society are viewed as having a reciprocal effect (Hester & Miller, 2003). This is similar to models based on social learning theory, which we turn to next.

Social learning theory. Unlike the moral model, social learning theory does not place blame or responsibility on the individual, but instead believes that the behaviors of an individual's problematic alcohol use are learned through personal experience. The behavior that he or she has learned is not viewed as a disease, but addressed as a behavior that needs modification. While learning the behavior of alcohol use, the

individual also develops expectations and beliefs about alcohol use that are influenced by their environment.

The social learning theory of human behavior was developed by Bandura (1977). Marlatt and Gordon (1985) reformulated social learning theory for substance use problems and developed the relapse prevention approach to treating substance use problems. Social learning theory states that behaviors develop through reinforcement and observational learning. According to Bandura, individuals develop expectations about the consequences of their behavior. When the individual believes that the behavior will have positive consequences, the individual will be likely to increase their engagement in the behavior. Individuals learn about positive consequences from being rewarded for certain behaviors or observing others experience positive consequences from engaging in a behavior. From these rewards, real or imagined, the individual develops expectations that engaging in the behavior will lead to specific rewards.

From the social learning perspective, alcohol problems are viewed as coping mechanisms that an individual has learned through his or her experiences (Marlatt & Gordon, 1985). Through these experiences, an individual develops expectations that positive consequences will occur when he or she uses alcohol. An individual may further use alcohol in certain settings and situations, which initially seem harmless, but later become problematic. Throughout their life history, he or she has been reinforced for the use of alcohol or has learned to use alcohol by observing family and friends. Some individuals may use alcohol to avoid negative emotions such as depression or to reduce the anxiety of social situations. Others may drink alcohol as a method of socializing or may receive positive reinforcement from the initial effects of alcohol. In

all of these examples, the individual has developed limited coping skills to address these situations (Marlatt & Gordon).

The social learning theory of substance use also incorporates the role of self-efficacy in determining an individual's use of alcohol (Marlatt & Gordon, 1985). Self-efficacy is the individual's belief that they are capable of accomplishing a task or coping with a specific situation (Bandura, 1982). Self-efficacy is termed *abstinence self-efficacy* when referring to the individual's beliefs about being able to refrain from alcohol use. Abstinence self-efficacy is the individual's belief that they are able to cope with situations and environments, whether positive or negative, without having to resort to alcohol use. Treatment based on the social learning theory aims to increase the individual's abstinence self-efficacy and improve their skills to cope with situations that have led to alcohol use in the past. The more abstinence self-efficacy the individual has, the more they believe that they can live a life without the use of alcohol, which in turn is believed to result in a reduction in alcohol use.

Harm reduction. The harm reduction approach to alcohol use problems does not explain the etiology of substance use problems, but instead focuses on the treatment of alcohol problems. No methods of treatment are seen as essential or superior from the harm reduction perspective. Treatment providers attempt to provide treatment based on changes in use that the client identifies. For example, treatment approaches such as moderation management attempt to teach individuals how to control and reduce their drinking behaviors (Marlatt, Blume, & Parks, 2001). The goal of harm reduction is to reduce the number of negative consequences experienced by the individual. Individuals who seek treatment are treated respectfully and his or her own self-determination is

promoted in treatment. The harm reduction approach also attempts to increase access to services and encourages constructive communication across treatment providers and treatment systems. Alcohol use is treated as a medical problem and medical treatment services are an integral part to harm reduction approaches (Marlatt et al.).

Self-Efficacy and Alcohol Problems

Abstinence self-efficacy has been researched as an outcome variable and a predictor variable in studies of individuals seeking treatment for their alcohol or substance use problems. Social learning theory suggests that as an individual's abstinence self-efficacy increases, the more likely they will be able to remain abstinent from alcohol (DiClemente, Fairhurst, & Piotrowski, 1995). According to the 12-step philosophy, which emphasizes powerlessness, individuals with low abstinence self-efficacy are believed to be more likely to remain abstinent from alcohol (Fiorentine & Hillhouse, 2003). Individuals who accept that they are unable to control their drinking behaviors will be more likely to circumvent situations that put them at risk for using alcohol. In other words, individuals with low abstinence self-efficacy will be successful in using an avoidance coping strategy. Conversely, individuals with high abstinence self-efficacy will place themselves in risky situations for using. Following the powerlessness approach of AA, individuals are more likely to return to alcohol use by placing themselves in risky situations.

Controlled Use Self-Efficacy

Fiorentine and Hillhouse (2003) conducted research on controlled-use self-efficacy, which is an individual's belief that they are able to engage in controlled drinking or drug use without returning to problematic drinking or drug use levels. They found that low controlled-use self-efficacy was related to abstinence acceptance, which in turn predicted likelihood of abstinence at 8-month follow-up in 360 substance users that varied in their substance of choice. This suggests that individuals who believed they needed to be abstinent were more likely to remain abstinent than those who believed they could control their drinking. High controlled-use self-efficacy was not found to be related to severity of drug use, which suggests that some individuals with high controlled-use self-efficacy did not revert to problematic use and others did relapse to problematic use. However, the method the researchers utilized to measure controlled-use self-efficacy had not previously been tested for psychometric properties and the severity of use was defined by number of drinks and not problems in functioning due to alcohol use or if they had met criteria for an alcohol use disorder. The findings suggest that individuals who do not have high self-efficacy are likely to believe that they need to remain completely abstinent or else they will return to pre-treatment levels of substance use and therefore avoid situations involved with alcohol use.

As suggested by Fiorentine and Hillhouse (2003), coping strategies such as avoidance may result from an individual's limited self-efficacy. Sitharthan and Kavanagh (1990), using the Situational Confidence Questionnaire (Annis & Graham, 1988), a more psychometrically sound measure, tested abstinence self-efficacy in individuals who participated in a controlled drinking program. They found that low

abstinence self-efficacy was a larger predictor of drinking at 6-month follow-up than previous alcohol severity and consumption of drinking while in treatment. In other words, those with higher abstinence self-efficacy were more likely to reduce their consumption of alcohol. These findings suggest that individuals with high abstinence self-efficacy are more likely to reduce or control their drinking behaviors even if they are not completely abstinent.

Self-Efficacy, Coping Skills, and Problem Severity

Participation in 12-step groups may not lead to low abstinence self-efficacy, although the theory behind 12-step philosophy suggests otherwise. Having high abstinence self-efficacy is contrary to the role of powerlessness in 12-step based treatments. Substance users participating in a 12-step-based recovery house who reported high abstinence self-efficacy were more likely to use problem-focused coping and less passive coping strategies (Majer, Jason, Ferrari, Olson, & North, 2003). Individuals in the group with low abstinence self-efficacy reported using more emotion-focused coping and were less optimistic about their future use of alcohol. This evidence suggests that individuals who use more active coping strategies to address their substance use problems are likely to have an increase in abstinence self-efficacy. Although the message of 12-step groups is powerlessness and lack of control over alcohol, the process of participating in 12-step or AA groups may be considered an active coping response.

In a population of inpatient male alcohol users, Skutle (1998) found that those with more severe alcohol problems were more likely to have low self-efficacy than

those with less severe substance use problems. Skutle further reported that participants who had low abstinence self-efficacy had more positive expectations about their use of alcohol. These individuals believed that alcohol was more likely to help them improve their social skills and reduce their depression and anxiety. This is consistent with social learning theory predictions, where individuals with positive expectations about their substance use are more likely to engage in use of the substance (Bandura, 1982). However, additional research suggests that alcohol use expectations adds limited predictive validity to what is already predicted by abstinence self-efficacy (Long, Hollin, & Williams, 1998). This highlights the importance of abstinence self-efficacy in relation to reduced consumption of alcohol and abstinence.

Self-Efficacy as a Predictor of Treatment Outcomes

Recent research on abstinence self-efficacy focuses on abstinence self-efficacy as a predictor of treatment outcomes. Research on intake psychosocial factors has shown abstinence self-efficacy to be a predictor of reduction of drinking and other drinking related outcomes (Burling, Rielly, Molteen, & Ziff, 1989; Rychtarik, Prue, Rapp, & King, 1992; Vielva & Iraurgi, 2001). Solomon and Annis (1990) found that individuals with higher self-efficacy at intake were less likely to have returned to drinking at 3-month follow-up. Although intake self-efficacy is certainly meaningful, it is the transformation in the client's self-efficacy over the course of treatment that is of particular interest to clinicians (Whittinghill, Whittinghill, & Loesch, 2000).

McKay, Maisto, and O'Farrell (1993) studied men who participated in behavioral marital therapy at an outpatient alcohol program at a Veteran's

Administration facility. Participants received either aftercare or no aftercare. End-of-treatment abstinence self-efficacy predicted abstinence at 6-month and 12-month follow-ups in participants who did not participate in aftercare. Abstinence self-efficacy was not a predictor of abstinence at follow-up in individuals who did receive aftercare. McKay and associates found that participants who participated in aftercare who had low abstinence self-efficacy at end of treatment showed an increase in abstinence self-efficacy after participating in the aftercare program. When they controlled for drinking behavior in the non-aftercare group, abstinence self-efficacy was not a significant predictor of abstinence at 1 to 6-month follow-ups, but was a predictor at 7 to 12-month follow-ups. This may be explained by individuals beginning to learn to use approach-coping and problem-solving strategies in problematic situations, as would be predicted by social learning theory. The authors suggest that low end-of-treatment abstinence self-efficacy may be a predictor of problems with future relapse.

Rychtarik and colleagues (1992) found that abstinence self-efficacy at end of treatment in male veterans did not contribute to predictions of alcohol use at six and 12-month follow-up beyond what was predicted by abstinence self-efficacy at intake. Further, individuals who had relapsed at 6 and 12-month follow-ups had lower abstinence self-efficacy at intake, but not at end of treatment. This trend continued when the authors measured the interval to relapse. Participants with higher abstinence self-efficacy who relapsed had longer periods of abstinence. Similar results were found by Greenfield and associates (2000) in both male and female participants. Intake abstinence self-efficacy was a predictor of relapse and time to relapse at 12-month follow-up. These findings are contrary to findings by Burling and associates (1989),

who reported increases in abstinence self-efficacy from intake to discharge were associated with abstinence.

Mayer and Koeningsmark (1992) only measured end-of-treatment abstinence self-efficacy. They did not find any relationship between end-of-treatment abstinence self-efficacy and drinking behaviors at 3-month follow-up. A more recent study by Ilgen, McKellar, and Tiet (2005) found that abstinence self-efficacy at discharge was the largest significant predictor of relapse at 1-year follow-up in 2,967 male veterans who met criteria for a substance use disorder. Other factors that were measured included psychiatric symptoms, frequency of substance use, level of alcohol use, and problems related to their substance use. The research on end of treatment self-efficacy or changes in abstinence self-efficacy during treatment appears to be mixed. Some researchers suggest that there may be a ceiling effect that leads to methodological issues in end-of-treatment self-efficacy studies (Demmel & Beck, 2004; Mayer & Koeningsmark; Rychtarik et al., 1992)

Discharge Self-Efficacy and Ceiling Effects

Ceiling effects occur when study participants have inflated expectations for success or inflated abstinence self-efficacy. It is logical that individuals would have higher expectations after completing treatment, which is purported to improve their ability to remain abstinent. Goldbeck, Myatt, and Aitchison (1997) found that staff who worked with individuals in an inpatient program had lower confidence ratings than the participants in the participants' ability to remain free from alcohol use following treatment. However, end-of-treatment abstinence self-efficacy still differentiated

abstainers from non abstainers at 3-month follow-up and was the largest predictor of abstinence at follow-up, over severity of drinking prior to admission and other demographic variables. Counselors may also have been biased due to burnout and high rates of relapse seen in the substance using population.

Demmel and Beck (2004) found that alcohol-dependent individuals rated themselves higher on abstinence self-efficacy after an inpatient treatment stay than they rated the likelihood of success for others with alcohol dependence. Alcohol-dependent individuals further tended to rate themselves as likely to have more success than others following treatment. Demmel and Rist (2005) found that individuals who reported higher neuroticism and avoidance coping styles were more likely to report inflated self-efficacy scores. Demmel and Beck suggested that these reports of abstinence self-efficacy may be inflated due to low self-esteem or self-concept in a neurotic population.

Although ceiling effects at end of treatment may explain some of the mixed findings, the research tends to suggest that abstinence self-efficacy is a significant predictor of treatment outcomes. Other biological, social, psychological, and demographic variables may influence an individual's overconfidence in cases where this is present, particularly neuroticism (Demmel & Rist, 2005). This is of concern when assessing and evaluating an individual's abstinence self-efficacy. The results of current research do not suggest that low abstinence self-efficacy leads to a decrease in drinking behaviors. The current research does not suggest that all individuals who report high abstinence self-efficacy will maintain abstinence or significantly reduce their drinking behaviors, but that a large portion of them do have positive outcomes. As a result, it has

been suggested that the role of abstinence self-efficacy in substance use and alcohol treatment should be taken seriously (Ilgen et al., 2005).

The population and settings that have been studied in the research on abstinence self-efficacy as a predictor of outcomes presents some limitations. The majority of the research reviewed here was conducted on participants from inpatient treatment settings. According to treatments based on social learning theory, the individual increases their sense of efficacy based on their experiences of success (Bandura, 1982; DiClemente et al., 1995; Marlatt & Gordon, 1985). Based on this assumption, individuals in outpatient treatment settings naturally have more opportunities to confront risky situations, which is likely to produce significant changes in abstinence self-efficacy. It would be interesting if ceiling effects hold true in an outpatient setting, where individuals are presented with difficult situations on a day-to-day basis. AA is solely an anonymous outpatient treatment where individuals are confronted with difficult and risky situations that threaten their sobriety. Therefore, AA participation may have an impact on abstinence-self efficacy.

Alcohol Use and Depression

Demmell and Rist (2005) suggest that individuals who have inflated reports of abstinence self-efficacy may have limited coping skills and tend to be neurotic. Individuals who suffer from depression are known to have limited or maladaptive coping skills, dysfunctional attitudes, and negative thinking patterns (Kovacs & Beck, 1978; Teasdale, 1983; Teasdale, 1988). Avoidance coping strategies have been found to predict substance use outcomes (Chung et al., 2001; Cooper, Russell, Skinner, Frone, &

Mudar, 1992; Forys, McKellar, & Moos, 2007). Substance users seeking detoxification have been shown to use more wishful thinking and isolation coping strategies and less problem-focused coping (Madden, Hinton, Holman, Mountjouris, & King, 1995).

Several researchers suggest that mood and alcohol disorders, particularly depression, tend to co-occur and that depressed individuals are more at risk for developing alcohol dependence when compared to the general population (Grant & Hartford, 1995; Kessler et al., 1997). Further research on depression demonstrates that alcohol use and other substances are used to cope with negative affect, a common symptom of depression (Carpenter & Hasin, 1999; Holahan, Moos, Holahan, Cronkite, & Randall, 2003).

Gilman and Abraham (2001) studied depression and alcohol use prospectively in a longitudinal study. The participants in this study only met criteria for one disorder, alcohol dependence or depression, at baseline. Individuals were followed for 1-year after completing baseline measures. Individuals who had more severe alcohol dependence at baseline were more likely to develop major depression at follow-up. Also, individuals who had more severe major depression at baseline were more likely to meet criteria for alcohol dependence at follow-up. Although the probabilities were increased with more depressive symptoms, there were no significant correlations between baseline major depression and alcohol dependence at 1-year follow-up. However, the probability for developing the other disorder was highest among females. Similar results have been found by Grant and Hartford (1995) where the prevalence of an alcohol use disorder is higher in individuals with depression than in the normal community. Crum, Storr, and Chan (2005) also maintain that individuals in the community who were depressed were more likely to have a lifetime prevalence of

alcohol dependence. However, a new onset of alcohol dependence was not found to be related to any type of depressive syndrome.

Davidson (1995) reported that 67% of individuals who were admitted to detoxification for alcohol use met criteria for major depression. Only 13% of these individuals met criteria for major depression following their detoxification. Davidson's findings suggest that the use of alcohol may lead to an increase in depressive symptoms and that depressive symptoms subside once alcohol use is discontinued. However, major depression is not a continuous disorder, but instead occurs in episodes. The more episodes that an individual experiences, the more likely they will have another major depressive episode (Judd, 1997; Keller, Lavori, Lewis, & Klerman, 1983). Furthermore, individuals who do not meet criteria for major depression may still be experiencing depressive symptoms that do not reach clinical levels, but may have an impact on drinking behaviors.

Sellman and Joyce (1996) found that lifetime depression and depressive symptoms at baseline did not predict relapse to alcohol use at 6-month follow-up in men who completed treatment for alcohol problems. Their findings are consistent with the findings by Gilman and Abraham (2003), who report that women seem to be more likely to have a stronger connection between depression and alcohol use. The results of this study and others are also questionable, given the use of *DSM-IV-TR* (APA, 2000) criteria. Other results may have been found if drinking behaviors and depressive symptoms were measured as continuous variables. Alcohol use, for example, could be measured by the amount of consumption, and depression could be measured by the

individual's subjective level of distress or number of depressive symptoms. Also, the severity of the consequences from drinking could also be a factor that is measured.

Overall, there appears to be a relationship between alcohol use and depressive symptomatology. While the current research portrays conflicting evidence regarding the exact nature of the relationship between the comorbidity of the two disorders, the literature still maintains that drinking behaviors are highly related to depressed and sad moods. Therefore, how an individual copes with difficult and negative moods may be related to his or her problematic or non problematic use of alcohol. In other words, an individual's method of coping with a depressed mood may be the use of alcohol.

Coping Skills

Holahan and associates (2003) examined the use of alcohol to cope with depression in a large group of depressed individuals. They found that individuals who used alcohol to cope at baseline assessments had increased levels of alcohol consumption and more alcohol-related problems at 1 and 4-year follow-ups. Further findings suggested that individuals who used drinking as a coping strategy at baseline had a stronger connection between their depressive symptoms and alcohol use during the follow-up periods. Folkman and Lazarus (1988) found that more problem-focused coping strategies were related to more positive emotions, suggesting that active coping strategies may be helpful in addressing negative mood states.

Increases in general coping skills and substance use coping skills from intake until 1-year follow-up were found to be predictive of abstinence at follow-up in dual diagnosis clients (Finney, Noyes, Coutts, & Moos, 1998). Substance use coping skills

are specifically related to the individual's skills to reduce or stop the use of substances. General coping skills were defined as the use of approach coping skills as opposed to avoidance coping. Approach coping involves active efforts by an individual to resolve or overcome a problem, while avoidance coping involves methods such as isolation and substance use. Problem solving and seeking social support can be considered methods of approach coping (Forys, McKellar, & Moos, 2007). Finney and colleagues found approach coping skills to be related to a decrease in psychiatric symptoms at discharge and follow-up. Substance use coping skills were not related to psychiatric symptom reduction, but general coping skills did have an impact on reduction of substance use. The results suggest that when individuals learn new general coping skills, they are likely to reduce their use of substances over a variety of substance use problems. The follow-up study suggested that individuals who attended 12-step groups were more likely to show gains in adaptive coping (Moggi, Ouimette, Moos, & Finney, 1999). Forys and colleagues also found support that general approach coping skills were related to fewer problems and reduced alcohol and substance use in individuals in residential facilities. Alcohol-specific coping skills were also found to be related to outcomes along with individuals who used less avoidance coping. So, approach coping skills that addressed any type of problems seemed to be more effective than avoidance strategies. Furthermore, Forys and colleagues demonstrated that individuals who participated in skill building counseling used more approach coping. Both the skills building and the 12-step groups showed less avoidance coping styles at 1-year follow-up.

Improvements in approach coping skills, self-efficacy, and access to social and family resources are shown to be predictive of substance use outcomes (Maisto, Connors, & Zywiak, 2000; Moos & Moos, 2007). Those who develop coping skills to deal with high-risk situations and difficult emotions are more likely to reduce their alcohol use (Cooper, Russell, Skinner, Frone, & Mudar, 1992). Additional research demonstrates similar results, in which more active coping strategies predict less severe problems due to alcohol use when compared to avoidance approaches to coping (Chung et al., 2001). Also, substance users seeking detoxification have been shown to use more wishful thinking and isolation coping strategies and less problem-focused coping (Madden et al., 1995). This highlights the limited amount of approach coping strategies available to chronic substance users.

Due to the relationship between depression and alcohol use and improvements in general coping abilities to reduce both depression and alcohol use, it is reasonable to ask how changes in cognitive factors that are related to depression may influence the use of alcohol. Specifically, how may factors such as learned helplessness and self-efficacy influence the consumption of alcohol?

Role of Learned Helplessness and Attributional Style

The theory of learned helplessness originates from animal studies, in which dogs exposed to inescapable shocks learned not to respond to a similar situation where they were able to escape the shock (Seligman & Maier, 1967). The dogs learned that any response to the shocks did not remove the shocks and they stopped trying to respond. Therefore, in similar situations the dogs demonstrated non behavior in

response to controllable shocks. After the original studies, learned helplessness was later demonstrated in humans (Hiroto, 1974). Maier and Seligman (1976) proposed that the behavior of learned helplessness has motivational, cognitive, and emotional components. The cognitive component is similar to the concept of expectancies proposed by Bandura (1977). According to learned helplessness theory, an organism comes to expect that their behavior will have no effect outcomes. The organism comes to expect that any behavior is hopeless. The motivational component is viewed as a consequence of the limited expectation the organism has if they do respond. Therefore, the organism fails to initiate any behaviors that attempt to change the situation, since they believe any response will not produce any positive outcomes. Lastly, the emotional component is a consequence of the situation becoming uncontrollable. It is believed by the researchers that depression is the resulting effect (Maier & Seligman).

Abramson, Seligman, and Teasdale (1978) reformulated the learned helplessness theory to include attributions. Attributions are used by an individual to explain the uncontrollability of the situation. They address a problem where one group of individuals may attribute their helplessness to the situation at hand, while another group of individuals may attribute their helplessness to personal factors. Abramson and colleagues suggested that certain attributions lead to depressive affect. They proposed that an individual who attributes their helplessness to internal, stable, and global conditions will be more likely to experience depression. Individuals who believe that their helplessness is due to external, unstable, and situation-specific factors are considered to be less likely to develop depression. The individual's method of defining why a situation is helpless was termed by Abramson and associates as *attributional*

style. Other researchers have also referred to this concept as explanatory style (Peterson & Vaidya, 2001). The individual's attributional style is considered by Abramson and associates to be a vulnerability factor for depression. The individual has to experience events that elicit this cognitive style in order for the individual to experience strong negative affect. Later research showed that individuals who attributed negative outcomes to the specifics of a situation were less likely to become depressed than individuals who attributed outcomes to global factors (Alloy, Peterson, Abramson, & Seligman, 1984).

A meta-analytic review of attributional style and depression showed that hundreds of studies have provided evidence that an internal, global, and stable attributional style is linked to depression (Sweeney, Anderson, & Baily, 1986). Further research has shown that an individual's expectations mediate the relationship between an internal, global, and stable attributional style and depression (Peterson & Vaidya, 2001). Due to the relationship between depression and alcohol use, attributional style and learned helplessness may play a role in the development and continuation of alcohol use, in particular, alcohol use that leads to significant psychosocial problems. However, research has been limited on the role that attributional style and learned helplessness play in alcohol use and substance use.

Newcomb and Harlow (1986) studied perceived loss of control in adolescent substance users. Perceived loss of control is similar to attributional style and the powerlessness approach advocated by AA. Newcomb and Harlow showed that uncontrollable life events were found to predict later use of substances. This was mediated by perceived loss of control. Therefore, those who attributed the

uncontrollability of the situation to internal causes were more likely to use substances than those who attributed the uncontrollable life events to external causes. This suggests that attributional style may play a role in later use of substances, although research in this area is limited. Beliefs that control over situations and events is external are considered to be common among individuals with strong spiritual beliefs. To the contrary, a high sense of spirituality has been linked to an increase in internal attributions and personal responsibility (Christo & Franey, 1995). As stated previously, spirituality is a major component of 12-step approaches and the focus of these approaches, on powerlessness and spirituality may not necessarily lead to an external attributional style.

A treatment outcome study that compared a highly structured behaviorally oriented treatment to a supportive treatment showed that individuals who are more helpless in regard to their substance use at intake had better outcomes if they received behavior therapy (Thornton et al., 2003). Individuals in the supportive group did better if they were less helpless at intake. This suggests that individuals who were less helpless only needed some support and encouragement to make changes, while more helpless individuals needed to learn new skills and make greater lifestyle changes to reduce their use of substances.

Research on the impact that learned helplessness and attributional style have on alcohol use is very limited. The research that has been done suggests that attributional style plays a role in the development, maintenance, and treatment of substance use problems. Due to the powerlessness philosophy of AA and other 12-step groups,

understanding the relationship between learned helplessness and alcohol use seems important for the field to develop effective treatments for alcohol use disorders.

Efficacy of Alcoholics Anonymous

Alcoholics Anonymous (AA) is one of the largest self-help support groups for alcohol use problems. The effectiveness of AA has been a constant debate within the substance use treatment field (Kownacki & Shadish, 1999; Peele et al., 2000). The difficulty of evaluating AA is the self-selection bias of those who participate. This makes it difficult to study AA under randomized controlled conditions (Tonigan, Connors, & Miller, 2003). Since individuals self-select themselves for participation in AA, otherwise known as selection bias, it is unknown whether there are motivational or personality factors involved with those who succeed in AA. Evidence has shown that individuals who continue to participate in AA show positive outcomes, but there is a large proportion of individuals who drop out of AA (Emrick, Tonigan, Montgomery, & Little, 1993; Moos & Moos, 2004; Peele et al.).

A meta-analysis by Tonigan, Toscova, and Miller (1996) showed that most studies on AA had serious methodological problems, and significant relationships were difficult to detect. In another meta-analysis, Kownacki and Shadish (1999) found that in some cases, AA was worse than no treatment, but that some components of AA treatment were helpful. These studies highlight the problem in identifying what about AA is effective for those who have positive outcomes.

There may be individual differences that play a role in those who continue to participate and have success compared to those who do not have success. There is a

question of whether AA is successful because of the message, the process of working the steps and obtaining a sponsor or whether people who participate in AA improve due to access to social supports, a high motivation to change, and changes in other psychosocial variables.

AA Participation and Outcomes

Fiorentine (1999) suggests that success in AA is related to frequent and continued attendance and not other variables, such as motivation. Fiorentine measured outcomes, demographic variables, and 12-step participation in substance users who completed at least 8-weeks of outpatient drug treatment. Participants who attended at least one 12-step group showed reduced alcohol consumption and drug use at 6 and 24-month follow ups when compared to individuals who did not participate in any 12-step groups. These differences continued when individuals who participated in weekly 12-step groups were compared to those who participated less than weekly. Increased and more frequent 12-step participation was related to less drug and alcohol use. Fiorentine also compared individuals with persistent 12-step attendance, those who dropped out, and individuals who were new to 12-step groups at each follow-up point. Persistors maintained abstinence levels, with dropouts decreasing in abstinence and new initiates maintaining the same level of alcohol use across treatments, but at a lower rate than persistors and dropouts. Dropouts continued to remain abstinent from drug use at a higher rate than new attenders from 6-month to 24-month follow-ups and had the same levels of alcohol use at 24-month follow-up. The stability of abstinence levels for drug and alcohol use in new initiates between the two follow-up points suggests that initial

attendance at 12-step groups had a limited effect on new members. Fiorentine also claims that despite frequent and weekly attenders reporting higher levels of motivation for recovery and motivation, improving predictions of abstinence at follow-up, there were no differences in motivation between frequent 12-step attenders and non attenders. Also, the author explains that those who participated in 12-step treatment did not have higher completion rates for treatment than non attenders and therefore, participation in treatment is not an indicator of motivation. However, motivation is not a constant factor in individuals and fluctuates over time (Prochaska and DiClemente, 1986). Also, treatment may not always be needed, as has been indicated by the natural recovery literature (Mariezcurrana, 1994; Walters, 2000). A later study conducted by Fiorentine and Hillhouse (2000) found that 12-step treatment predicted longer attendance in outpatient drug treatment and that 78% of individuals who participated in treatment had previously attended 12-step groups. These findings contradict the previous conclusions that there were no treatment completion differences among AA attenders and non attenders. Again, these studies highlight the debate on why 12-step groups seem to work for some and why others do not continue in 12-step groups. What we can conclude from this study is that individuals who participate in 12-step groups on a consistent and frequent basis will be likely to significantly reduce their alcohol and drug use. Currently, it is not known if other methods are more cost efficient or effective than continuous AA attendance or what about AA attendance is helpful.

Further research on AA and 12-step programs also suggests that frequent attendance improves outcomes (Connors, Tonigan, & Miller, 2001; Moos & Moos, 2004; Morgenstern, Labouvie, McCrady, Kahler, & Frey, 1997; Timko, Moos, Finney,

& Lesar, 2000; Tonigan, Connors, & Miller, 2003). Montgomery, Miller, and Tonigan (1995) showed that AA participation was not predictive of reduced drinking outcomes or abstinence. They found that individuals who reported more involvement in AA recovery activities and who used more AA tools showed decreased consumption of alcohol. Individuals who reported more use of AA tools were more likely to be abstinent from alcohol use. This suggests that it may not be participation in meetings that is helpful for 12-step participants, but the actual practice of the steps and skills stressed at meetings is more likely to lead to reduced alcohol consumption. This is supported by Tonigan and colleagues (2003), who conducted an analysis from Project MATCH (Project MATCH Research Group, 1993) data. Consistent with previous studies, frequency of AA attendance was associated with outcomes related to alcohol consumption. More frequent attendance in AA was found for those who participated in Twelve-Step Facilitation (TSF) treatment. This suggests that individuals who participated in TSF were taught more about AA philosophy. However, Timko, DeBenedetti, and Billow (2006) observed that working the 12 steps was not related to improvements in alcohol use. This study compared a group of participants who received an intensive referral to 12-step treatment to participants who received a standard referral. The intensive group received education on AA, the 12-step philosophy, and how to obtain a sponsor. Also, counselors set up meetings for participants to meet sponsors before meetings, gave a local listing of meetings, and had participants journal about meetings. Counselors frequently followed up with participants to make sure they were attending meetings. Participants in the intensive referral group performed better on alcohol use and severity measures at 6-month

follow-up than the standard group. Positive outcomes were related to being involved at meetings and becoming a sponsor. Interestingly, individuals with previous 12-step involvement prior to attendance showed less meeting attendance than individuals who were new to 12-step programs or had limited involvement (Timko et al., 2006). The results observed by Timko et al. suggest that the socialization and modeling process of AA may be helpful. This study also raises questions about what leads prior AA attendees to have limited attendance compared to new attendees.

Ferri, Amato, and Davoli (2006) reviewed a number of studies on alcoholics anonymous as part of the Cochrane Reviews. They included studies that compared AA attendance, TSF, or some variant of the 12-step philosophy to either no-treatment controls or other psychological interventions. After review of multiple studies through various search engines, eight studies were reviewed and analyzed by the researchers. Ferri and colleagues concluded that these studies did not demonstrate any effectiveness for 12 step-based approaches to treating alcohol problems. They did suggest that involvement in AA may keep individuals in treatment, but did not show any superiority to the other treatments or control groups.

Psychosocial Variables Related to AA Participation and Alternative Treatments

Timko and colleagues (2000) followed individuals meeting criteria for alcohol dependence over an 8-year period who had previously not received any type of formal or informal treatment for their alcohol use. Individuals were compared on types of treatment, both formal and informal, they received over this period. Consistent with findings of other studies, individuals with higher frequency of AA participation were

more likely to be abstinent during 1, 3, and 8 -year follow-up periods than individuals who did not participate in any type of treatment. Interestingly, individuals who engaged in formal outpatient or inpatient treatment used more approach coping skills than individuals who did not participate in any type of treatment at 1 and 3-year follow-ups. Individuals who participated in AA groups were more likely to be abstinent at 1 and 3-year follow-ups than individuals who participated in formal treatment only, but these results did not hold at the 8-year follow-up. The study does not take into account individuals who may still be using or drinking, but not suffering problems or consequences from their use. Similar results were found when a group that participated in both formal treatment and AA was compared to individuals who only participated in formal treatment. The former group showed better outcomes at 1 and 3-year follow-ups. All of the individuals who engaged in some type of treatment showed continued improvement across the follow-up points on abstinence, as well as coping and social measures, with the exception of the AA-only group. The AA-only group showed improvements over the first year of treatment and remained stable through the rest of treatment. Again, the findings suggest that increased and more frequent participation in either formal or informal treatment leads to a reduction in alcohol use and alcohol-related problems, as well as an increase in approach coping. Moos and Moos (2004) analyzed the same population of individuals and found that more frequent AA attendance differentiated those who abstained from alcohol use from those who did not abstain from alcohol use at 1-year follow-up. However, frequency of participation did not predict outcomes at the 8-year follow-up point. Individuals who continued to participate in AA and had longer durations of participation were more likely to be

abstinent at follow-up, had fewer alcohol-related problems, and showed increases in self-efficacy. Therefore, it is the length of continuous participation and not the frequency of participation in a short period of time that seem to be related to more positive outcomes. This supports the notion that it is not the message of AA participation that leads to change, but the involvement in the groups. Interestingly, individuals in this group who participated in AA the first year following their admission to a detoxification unit had significantly better outcomes at the 8-year follow-up point than those who participated in AA at the same duration and frequency from years 2 through 8 post detoxification. In fact, those with no AA participation did better than individuals who had a delayed participation in AA (Moos & Moos). The authors suggest that individuals with delayed attendance may have developed more severe problems, been less motivated to change, or had trouble implementing the tools of 12-step philosophy. Also, these individuals may have been in need of psychiatric or counseling services that are beyond the scope of AA groups.

Consistent with research on abstinence self-efficacy and reduction of alcohol use, the above studies found a relationship between increased self-efficacy and decreased alcohol consumption and alcohol-related problems (Moos & Moos, 2004; Timko et al., 2000). Additionally, self-efficacy was found to improve for those who had participated in AA for longer durations and for those with more frequent attendance during the first year of treatment. Connors and associates (2001) found that AA participation positively predicted the number of days abstinent at 1-year follow-up in the participants in Project MATCH. Again, the focus on abstinence as an outcome does not allow for an analysis of other individuals who may have benefited from treatment.

This relationship was mediated by the individual's self-efficacy to avoid use of alcohol. Individuals with more AA participation increased in abstinence self-efficacy and were more likely to have lower instances of alcohol consumption. Similar to the results of Connors and associates, Morgenstern and associates (1995) found that increases in self-efficacy, motivation, and active coping efforts mediated the effects of AA participation on drinking outcomes. This is consistent with findings by Moggi and colleagues (1999) where more AA participation was related to more adaptive coping efforts.

Self-efficacy and active coping efforts are variables that appear to be inconsistent with the philosophy of AA and more consistent with cognitive-behavioral and relapse prevention approaches to the treatment of substance use disorders. Specifically, self-efficacy implies that the individual has the belief that they are in control of their alcohol use, which is contrary to the powerlessness approach of AA (Miller & Kurtz, 1994). Research has studied the effect that 12 step facilitation (TSF) and cognitive-behavioral treatments have on psychosocial variables that are thought to mediate outcomes in both approaches. Ouimette, Finney, and Moos (1997) found equal 1-year substance use and psychosocial outcomes when comparing inpatient TSF to inpatient cognitive-behavioral therapy (CBT). The psychosocial factors the researchers measured included legal status, level of psychopathology, employment, and housing. These findings suggest that both approaches to treatment are effective in producing positive outcomes. However, this study was conducted using an inpatient population, which makes it difficult to implement CBT-related exercises that require real-world experiences.

Another study using data from the same treatment programs used by Ouimette and associates found that individuals who participated in TSF and CBT improved on measures of self-efficacy, outcome expectancies, and coping skills (Finney, Noyes, Coutts, & Moos, 1998). Coping skills included positive appraisals and approach coping strategies. The TSF group showed higher increases in 12-step outcomes, such as attending meetings, following the steps, using sponsors, adherence to the disease model, and having abstinence as a goal. Individuals participating in eclectic programs also showed improvements in self-efficacy, outcome expectancies, and coping skills. Participants in the CBT group did show some improvements in 12-step meeting attendance and involvement with friends and sponsors, but not in adherence to the disease model or to abstinence as a goal. This indicates that having success in treatment tend to improves self-efficacy, outcome expectancies, and coping skills, regardless of basic philosophy.

The above two studies are problematic in that participants were not randomly assigned to conditions (Finney et al., 1998; Ouimette et al., 1997). These participants either chose or were assigned by referral sources to their particular treatment program. Also, the study did not take into account the number of treatment dropouts in each condition. The CBT group had 15% drop out and the TSF group had 22% of the group dropout. Of further concern is that the orientations of the facilities were determined by questionnaires completed by counselors and patients and not by examination by a third party. The facilities could claim to be a certain orientation, but may not actually practice that method of treatment. The exact nature of the interventions that individuals received at these treatment centers is relatively unknown and speculative based on

counselor and patient retrospective reports. Interventions may have involved aspects of both treatment philosophies. Also, individuals were only considered to be in remission if they were completely abstinent. Anybody who drank one drink one day was considered to not be in remission. This may bias the results by not accounting for individuals who made significant improvements in treatment and no longer met criteria for any substance use disorders.

A randomized trial that assigned participants to either a relapse prevention (CBT) or TSF group compared differences on outcome process variables and substance use (Brown, Seraganian, Tremblay, & Annis, 2002). Both treatment groups had equal outcomes on substance use and severity variables. The CBT group showed greater increases on confidence measures and ability to handle higher risk situations than the TSF group. Improvements on these variables were found to predict outcomes. The TSF group showed greater improvements on 12-step related outcomes, such as working the steps and the use of spirituality, although these findings were moderate when compared to the CBT group. These variables were also moderately predictive of outcomes in the TSF group. Interestingly, the TSF group showed some changes in confidence which also were related to treatment outcomes. This study further supports the premise that self-efficacy and improved coping skills are related to or mediate outcomes and that despite the message of TSF, individuals who participate in TSF show improvements on variables that are stressed in CBT treatment. Also, CBT appears to show more improvements than 12-step approaches during randomized control trials (Brown et al.).

Reasoning for the Current Study

Improved abstinence self-efficacy and increased approach coping skills appear to be factors that are related to positive outcomes in substance use treatment regardless of the type of treatment. For those individuals who have success from participation in AA, changes in these factors may play a significant role in continued abstinence. Does AA participation lead to an increase in self-efficacy and reduced learned helplessness to control the use of alcohol, as opposed to the powerlessness approach that is advocated by AA groups? Also, how does depression influence outcomes and changes in helplessness and abstinence self-efficacy? Due to the relationship between depression and alcohol use, individuals who have an increase in self-efficacy may have developed improved skills to deal with negative affect. The current study examines the relationships between the amount of AA attendance, abstinence self-efficacy, learned helplessness, depression and other pre treatment variables.

Research Question 1

Do psychosocial variables measured at pretreatment predict severity of alcohol dependence upon admission? These variables include abstinence self-efficacy, learned helplessness, depression, and need for treatment because of drinking.

Hypothesis 1. Individuals who have high pretreatment abstinence self-efficacy, as measured by the Drug Taking Confidence Questionnaire (DTCQ), will have less alcohol problems and report fewer days drinking in the 30 days prior to admission, as measured by the Addiction Severity Index (ASI).

Hypothesis 2. Individuals who have low pretreatment learned helplessness, as measured by the Learned Helplessness Scale (LHS), will have fewer alcohol problems

and report fewer days drinking in the 30 days prior to admission, as measured by the ASI.

Hypothesis 3. Individuals who have lower depression scores on the Beck Depression Inventory (BDI) at pretreatment will have fewer alcohol problems and report fewer days drinking in the 30 days prior to admission, as measured by the ASI.

Hypothesis 4. Individuals who report a greater need for treatment will show no differences in the amount of alcohol problems and report fewer days drinking in the 30 days prior to admission, as measured by the ASI.

Relapse prevention and social learning models of alcohol use suggest that an increase in abstinence self-efficacy is a necessary and integral part of treatment for alcohol users (Annis & Davis, 1989; DiClemente, Fairhurst, & Piotrowski, 1995; Marlatt & Gordon, 1985). Motivational approaches explain that individuals will be unable to make changes in their behaviors unless they have the self-efficacy that they are able to make changes (Miller & Rollnick, 2002). Recent studies on alcohol use have shown that pretreatment and posttreatment abstinence self-efficacy are predictors of positive outcomes after treatment for alcohol and substance use (Demmel & Rist, 2002; Goldbeck, Myatt, & Aitchison, 1997; Ilgen et al., 2005; McKay et al., 1993; Solomon & Annis, 1990). This suggests that increases towards a positive abstinence self-efficacy would improve outcomes and reduce alcohol use behaviors.

Multiple epidemiological and longitudinal studies have shown associations between alcohol dependence and depression (Davidson, 1995). Gilman and Abraham (2001) found that an increase in alcohol dependence predicted increases in depression. Increases in depression also predicted the presence of alcohol dependence. This

evidence suggests that the relationship between problematic drinking and depressive symptoms is a cycle where the presence of one makes it likely that the other will occur.

Research on learned helplessness and attributional style has shown a relationship of these constructs to depression (Sweeney et al., 1986). Given the relationship between depression and alcohol dependence (Davidson, 1995), learned helplessness and attributional styles related to depression may explain continued use of substances. Thornton and colleagues (2003) found substance users who were more helpless benefited in more structured skill-focused treatments. Some of the evidence suggests that a decrease in helplessness over the problem may improve outcomes in substance users.

Research Question 2

Does participation in Alcoholics Anonymous (AA) in treatment predict changes in psychosocial variables at the end of treatment?

Hypothesis 5. Individuals who report high attendance in AA while in treatment, as measured by the ASI, will have high abstinence self-efficacy at the end of treatment, as measured by the DTCQ.

Hypothesis 6. Individuals who report high attendance in AA while in treatment on the ASI will have low learned helplessness, as measured by the LHS, at the end of treatment.

Hypothesis 7. Individuals who report high attendance in AA while in treatment on the ASI will have low depression scores, as measured by the BDI, at the end of treatment.

Moos and Moos (2004) found that individuals who had consistent and long-term participation in Alcoholics Anonymous (AA) had higher abstinence self-efficacy 8-years after initial treatment. The individuals used in this study were first-time seekers of treatment for their alcohol use disorders during the intake. The 16-month follow-up of this population showed that self-efficacy and AA participation at one year post admission moderately predicted alcohol consumption and alcohol problems at 16 months (Moos & Moos, 2007). Stronger predictions were found at 3-month and 8-month follow-up. Brown and associates (2002) found that individuals with higher confidence to handle risky situations had more positive treatment outcomes in both CBT treatment and TSF treatment.

Research Question 3

Does participation in Alcoholics Anonymous in treatment and two months post treatment predict psychosocial variables measured at 2-month posttreatment?

Hypothesis 8. Increased participation in AA meetings, as measured by the Twelve Step Participation Questionnaire (TSPQ), at two-months posttreatment will have high abstinence self-efficacy, as measured by the DTCQ, at 2-months posttreatment.

Hypothesis 9. Increased participation in AA meetings, as measured by the Twelve Step Participation Questionnaire (TSPQ), at 2-months posttreatment will have low learned helplessness, as measured by the LHS, at 2-months posttreatment.

Chung and associates (2001) found that individuals who showed changes in coping strategies over the course of treatment for their alcohol use had less severe

alcohol problems at 12 month follow-up. Individuals with less severe problems showed increases in behavioral approach coping and decreases in cognitive avoidance. This suggests that individuals who address their alcohol problems with active strategies, both cognitive and behavioral, will have better outcomes. Also, research on abstinence self-efficacy has shown positive findings for individuals with high end-of-treatment abstinence self-efficacy (Burling et al., 1989; Ilgen et al., 2005; McKay et al., 1993) Although the message of AA promotes powerlessness and avoidance coping strategies, the process of going to meetings and forming social support networks can be viewed as active coping strategies. Therefore, participation in an active coping strategy that produces positive results would change an individual's abstinence self-efficacy, helplessness, and mood.

Chapter 2

*Method**Design*

The archival data used in the current study comes from a project conducted on spirituality and treatment matching by Sterling and colleagues (2006). Participants in this study completed a variety of psychosocial instruments that measured multiple areas of psychological functioning, as well as participation in 12-step groups. The measures used were completed by participants at admission to inpatient treatment, at treatment end, and at follow-up 3-months post admission. All participants had sought inpatient treatment for alcohol use at one of two sites differing in the degree to which spirituality was promoted as a core component of treatment. Indeed, one site offered spiritually based treatment, while the other site followed the medical model of addiction. Both sites emphasized participation in 12-step groups.

Participants

While 404 individuals participated in the parent study, due to limitations related to the administration of certain measures, the data from a subsample of 104 participants who voluntarily sought inpatient treatment were used for this project. These 104 participants were the only individuals who completed measures of AA attendance at the 2-month follow-up point.

Participants reported an average of 19.36 days of drinking in the month prior to admission ($SD = 9.87$). Eighty five-percent of the participants were white, 59.6% were male, and 60% of the participants identified themselves as being Christian. Other

religions included Islam, Judaism, and those who considered themselves to be unidentified. The average age of participants was 42.63 ($SD = 10.78$). Ninety-four of these participants were admitted to the inpatient program that emphasized spirituality as a core component of the environment of care. Ten of the participants received treatment at the program that did not actively emphasize spirituality. Both programs were located in suburban Philadelphia.

Measures

Drug Taking Confidence Questionnaire. The Drug Taking Confidence Questionnaire (DTCQ) is a 50-item measure of an individual's coping self-efficacy across a variety of situations known to provoke renewed use (Annis, Sklar & Turner, 1997). Eight subscale scores are available and include unpleasant emotions (UE), physical discomfort (PD), pleasant emotions (PE), testing personal control (TPC), urges and temptations (UT), conflict with others (CO), social pressures to use (SP), and pleasant times with others (PT). The UE and CO subscales contain 10-items and have reliability coefficients of .94 (Sklar, Annis, & Turner, 1997). The other six subscales contain five items and have reliability coefficients that range from .79 to .94. The overall score of the DTCQ has a reliability coefficient of .98 (Sklar et al., 1997).

Beck Depression Inventory. The Beck Depression Inventory-II (BDI-II: Beck, Steer, & Brown, 1996) consists of 21 items developed to measure the intensity, severity, and depth of depression in patients with psychiatric diagnoses.

Learned Helplessness Scale. The Learned Helplessness Scale (LHS: Quinless & Nelson, 1988) is a 20-item likert scale measure that assesses learned helplessness like

ideations. The LHS was administered to a normative sample of 241 adults and showed to have an internal consistency coefficient of .85 in this sample. The LHS was found to be related to self-esteem, ($r = -.622$) and not related to age, ($r = .041$) (Quinless & Nelson).

Addiction Severity Index. The Addiction Severity Index (ASI: McLellan, Luborsky, Woody, & O'Brien, 1980) is a semi structured interview that assesses seven areas of functioning frequently impacted by addiction. These areas are medical problems, family/relationship problems, substance use problems, alcohol use problems, employment/education problems, legal problems, and psychiatric problems. Data gathered in these areas for lifetime problems, as well as problems in the last 30 days, yields both severity scores for each category and weighted composite scores. The internal consistency of the seven composite severity scores ranged from .65 for employment and legal problems to .89 for medical problems (Leonhard, Mulvey, Gastfriend, & Schwartz, 2000). In another study on the ASI, the interrater reliabilities ranged from .74 for the employment scale to .91 for the drug use scale and an overall reliability of .89 (McLellan et. al, 1985). Test-retest reliabilities on the severity ratings across a 3-day period were all .92 and above. McLellan and colleagues (1985) have also demonstrated good concurrent and discriminant validity.

Twelve Step Participation Questionnaire. The Twelve-Step Participation Questionnaire (TSPQ: Tonigan, Miller, & Connors, 1997) is an updated version of the Alcoholics Anonymous Involvement scale (AAI: Tonigan, Connors, and Miller, 1996). The TSPQ is a 13-item inventory that measures recent and lifetime attendance and participation in AA. A factor analysis of the AAI identified two factors that explained

49% of the variance. The two factors were attendance and involvement. Involvement consisted of activities associated with AA participation such as completing step work. The attendance factor involved recent, long-term, and lifetime attendance at AA meetings. Internal consistency for the AAI is .85, with all item-total correlations exceeding .30. Test-retest correlations for each of the items of the scale ranged from .82 to 1.00, except for item 11, "No. of AA meetings attended in the last year," which was .58. However, the TPSQ does not contain this item and only requests reports for the last 90 days of treatment. The TPSQ consists of nine yes or no questions similar to those on the AAI, a question about participation in AA in the last 90 days, and the number of steps completed (Tonigan et al., 1997).

Independent Variables

The independent variable in this study is the frequency of 12-step participation at 3-month follow-up.

Dependent Variables

The dependent variables in this study are abstinence self-efficacy, learned helplessness, attributional style, perceived need for treatment, depression, and severity of dependence at admission.

Procedure

Participants completed informed consent forms and the various study measures following the intake at the respective treatment sites. As previously described, the

measures examined various psychosocial areas of functioning and need for treatment. The four measures that will be used as a part of this study include the Drug Taking Confidence Questionnaire (DTCQ), the Beck Depression Inventory (BDI-II) the Learned Helplessness Scale (LHS), and the Addiction Severity Index (ASI). These measures were also completed by participants at posttreatment and 2-months following the end of treatment. Follow-up interviews were conducted by telephone. Treatment service reviews were also administered by a research assistant (RA) on a weekly basis. The Treatment Services Reviews provided a quantitative profile of the number and types of services received by patients during alcohol and drug treatment. The TSR included a review of attendance at spiritually oriented activities (i.e., Sunday services, weekly spirituality lectures, meetings with the chaplain, etc.). At the same time that the RA completed the TSR, the participants also completed other likert scale measures on spirituality. Each participant's participation in 12-step groups, particularly Alcoholics Anonymous (AA), was assessed at the 3-month follow-up using the TSPQ (Sterling et al., 2006).

Chapter 3

*Results**Preliminary Analysis*

Changes in outcome variables over the three time points of the study were assessed using repeated measures analysis of variance (ANOVA). The three time points included admission, discharge or end of treatment, and 2-months post discharge. Thirty-five of the 104 participants did not complete end-of-treatment data for the DTCQ, LHS, and the BDI-II and four did not complete follow-up DTCQ. Three of those participants missed completing the data at both of those time points. The ANOVA found significant for changes in the mean of the total score of the DTCQ $F(1,65) = 47.749, p < .000$. Follow-up Fisher's LSD post hoc tests revealed that scores increased from admission ($M = 64.49, SD = 27.28$) to end of treatment ($M = 82.99, SD = 16.65$), $p < .000$. Also, there was a significant difference between scores from end of treatment to 2-month follow-up ($M = 88.1, SD = 16.02$), $p < .009$. Since some individuals did not complete the DTCQ at the end of treatment, a t-test was conducted that compared admission DTCQ scores for individuals who completed end-of-treatment DTCQ to those who did not complete the DTCQ at the end-of-treatment. Any differences found would be problematic for the planned analyses of this project. No significant differences were found.

One participant did not complete an intake LHS or end-of-treatment LHS. Repeated measures ANOVA demonstrated a significant effect of time $F(1,68) = 35.00, p < .000$. Follow-up post hoc tests were conducted. Follow-up Fisher LSD post hoc analyses showed that scores on the LHS decreased from admission

($M = 40.81$, $SD = 9.34$) to end of treatment ($M = 36.28$, $SD = 9.516$), $p < .000$.

Although not significant, scores on the LHS continued to decrease at follow-up ($M = 34.86$, $SD = 6.805$), $p < .417$. A t-test was conducted that compared admission LHS scores for individuals who completed end-of-treatment LHS to those who did not complete the LHS at end-of-treatment. No significant differences were found.

A paired-samples t-test was conducted on the BDI-II at admission and end of treatment. Due to the study design, a follow-up BDI-II was not administered to participants. Ten participants did not complete initial BDI scores. A significant t-test found ($t(61) = 9.38$, $p < .000$) that depression decreased from admission ($M = 18.84$, $SD = 10.39$) to end of treatment ($M = 6.76$, $sd = 7.137$). Overall, these results suggest that individuals improved on outcomes measures throughout treatment and these gains continued at 2-month follow-up for abstinence self-efficacy and learned helplessness.

The relationship between admission variables and client participation in Alcoholics Anonymous (AA) while in treatment and total AA participation while in treatment plus AA participation in the 2-months following treatment was examined. Admission variables chosen were the number of prior treatment episodes, number of drinking days in the 30 days before admission, overall ASI alcohol use severity scores, and number of problems due to the use of alcohol. These variables were chosen in order to examine what variables correlate with participants who have more alcohol-related problems and alcohol use. Four participants did not complete reports of AA participation while in treatment. Two significant correlations were observed. Number of prior treatment episodes was seen to be negatively correlated with participation in AA while in treatment

($r = -.303, p < .01$) indicating that individuals who reported more previous treatment episodes were less likely to participate in AA during this course of treatment. Prior treatment episodes was not significantly correlated with participation in AA at 2-month follow-up ($r = -.078$). Admission abstinence self-efficacy, as assessed by the DTCQ was negatively correlated ($r = -.296, p < .05$) with participation in AA in treatment, suggesting that individuals with higher abstinence self-efficacy upon admission were less likely to participate in AA while in treatment. Interestingly, a significant relationship was not found between abstinence self-efficacy at admission and prior treatment episodes ($r = -.043$).

Lastly, participation in AA reported during treatment was moderately positively correlated with participation in AA at 2-month follow up ($r = .256, p < .05$). One participant had missing data on AA participation at follow-up. Although significant, this suggests that AA participation changed after participants were discharged from treatment. Also, the longer time frame of reporting could have contributed to some unreliable reports.

Question 1

Question one addresses hypotheses one through four. These hypotheses were tested via Pearson product-moment correlations.

Hypothesis 1. Pretreatment abstinence self-efficacy, as assessed by the overall DTCQ, score will be significantly and negatively correlated with ratings of alcohol problems and number of days drinking recorded on the ASI.

No data on intake ASI variables were missing. Abstinence self-efficacy, as assessed by the overall DTCQ at admission, was found to correlate negatively with alcohol composite scores at intake, number of days drinking in the one month prior to intake, and number of alcohol related problems, as measured by the ASI at intake (Table 1). The number of days that participants were bothered or troubled by alcohol-related problems was not significantly correlated with abstinence self-efficacy. These results suggest that individuals with more abstinence self-efficacy reported experiencing less severe problems related to their alcohol use. The results confirm the initial hypothesis of the study.

Hypothesis 2. Pretreatment learned helplessness will be significantly and positively correlated with ratings of alcohol problems and number of days drinking on the ASI.

Learned helplessness as reported on the LHS at admission, was found to correlate significantly ($r = .286, p < .01$) with the number of alcohol-related problems at intake which is shown in table two. No other significant correlations were found between admission variables and scores on the LHS. This result suggests that individuals who reported being more helpless had more alcohol-related problems in the 30 days prior to treatment. While the correlation is modest the results are consistent with the hypothesis.

Hypothesis 3. Pretreatment depression scores will be significantly and positively correlated with ratings of alcohol problems and number of days drinking on the ASI.

Depression, as measured by the BDI-II at admission, was found to correlate significantly with alcohol severity scores at intake, number of days drinking in the

thirty days prior to intake, and number of alcohol-related problems at intake (Table 3). While the correlations are modest, this pattern of findings suggests that individuals reporting more alcohol problems were more likely to have mood difficulties and is consistent with the hypothesis.

Hypothesis 4. There will be no significant correlations between the need for treatment and ratings of alcohol problems and number of days drinking, as reported on the ASI.

Need for treatment, as reported on the ASI at admission, had significant positive correlations with alcohol severity scores at intake, number of days drinking in the 30 days prior to intake, and number of alcohol-related problems at intake (Table 4). These results are consistent with the hypothesis and indicate that the more problems an individual is having as the result of alcohol use, the more they believe that they are in need of treatment. Interestingly, this result was found in a sample of individuals who had already made the decision to seek treatment.

Question 2

Hypotheses 5 through 7 addressed question two. These hypotheses were tested by stepwise regression analysis, with participation in AA serving as the predictor variable. Abstinence self-efficacy, learned helplessness, and depression were the criterion variables in three separate analyses. Other psychosocial variables at admission were entered as predictor variables and possible covariates.

Hypothesis 5. High participation in AA in treatment will predict high abstinence self-efficacy at the end of treatment.

A stepwise linear regression was conducted with the overall end-of-treatment DTCQ as the criterion variable. The predictors were admission DTCQ, previous participation in treatment, and participation in AA while in treatment, as measured by the TSR. Other admission data, alcohol problems, and days drinking were excluded due to possible problems of multicollinearity. Admission DTCQ was the only significant predictor of overall end-of-treatment DTCQ score ($F(1,67) = 38.747, p < .000, B = .605$), with an r^2 of .366. Therefore, 36% of the variance in end-of-treatment self-efficacy was explained by admission abstinence self-efficacy. This is inconsistent with this hypothesis.

A second stepwise linear regression was conducted, but this time excluding admission abstinence self-efficacy in the equation. This analysis was conducted to see if anything predicted end-of-treatment DTCQ besides itself. Results indicated that only admission alcohol severity scores on the ASI predicted end-of-treatment abstinence self-efficacy ($F(1,67) = 4.82, p < .032, B = -.259$). While the direction of the regression coefficient indicates that the more severe an individual's alcohol problems at admission the less self-efficacy they have at the end of treatment, r^2 was only .067.

Hypothesis 6. High participation in AA in treatment will predict low learned helplessness at the end of treatment.

A stepwise linear regression was conducted with end-of-treatment learned helplessness scores as the criterion variable. The predictors were admission LHS, previous participation in treatment, and participation in AA during inpatient treatment as measured by the TSR. Other admission data, alcohol problems, and days drinking were left out due to their high intercorrelations. Admission LHS was the largest

predictor of end-of-treatment LHS ($F(1,67) = 59.97, p < .000, B = .686$), with an r^2 of .471. Number of prior treatment episodes was also a significant prediction ($F(2,66) = 34.71, p < .000, B = .205$), with an r^2 of .513, with more previous treatment predicting greater helplessness at the end of treatment. Participation in AA during treatment was also entered into the equation ($F(3,65) = 25.584, p < .000, B = .179$), raising r^2 to .541. The regression weight suggests that the greater the number of meetings attended while in treatment, the more helpless they were at the end of treatment. This is inconsistent with the hypothesis of the study that participation in AA would decrease learned helplessness.

Hypothesis 7. High participation in AA during treatment will predict low depression at the end of treatment.

A stepwise linear regression was conducted with end of treatment depression as measured by the Beck Depression Inventory-II (BDI-II) as the criterion variable. The predictors were admission BDI-II, previous participation in treatment, and participation in AA during inpatient as measured by the TSR. Other admission data, alcohol problems, and days drinking were left out due to their high correlations with each other. Level of depression at admission was the largest and only predictor of end-of-treatment depression ($F(1,60) = 10.029, p < .002, B = .380$), with an $r^2 = .144$, which is a mild prediction. Again, initial BDI-II scores were left out of the equation to test for other possible predictors of end of treatment depression. When admission BDI-II was excluded no significant predictors of end of treatment depression were found. This result is not consistent with the hypothesis.

In general the results for question 2 are not consistent with current hypothesizing. The results seem to suggest that the best predictor of end-of-treatment psychosocial functioning on these measures were initial scores. Learned helplessness was the only outcome variable that was predicted by AA participation, but in a direction inconsistent with the current hypotheses.

Question 3

Hypotheses 8 through 9 addressed research question 3. These hypotheses were tested by using stepwise regression, with participation in AA being the predictor variable. Abstinence self-efficacy and learned helplessness measured at 2-months posttreatment were the criterion variables in two separate analyses. Other psychosocial variables at admission were entered as predictor variables and possible covariates.

Hypothesis 8. High participation in AA treatment and in the 2-months following treatment will predict high abstinence self-efficacy at 2-months post treatment.

A stepwise linear regression was conducted with abstinence self-efficacy at 2-month follow-up as the criterion variable. The predictors were admission abstinence self-efficacy, previous treatment episodes, and participation in AA while in treatment and the 2-months following treatment. Other admission data, alcohol problems, and days drinking, were left out due to their high correlations with each other. Admission abstinence self-efficacy was the only predictor of abstinence self-efficacy at 2-month follow-up ($F(1,97) = 9.28, p < .003, B = .295$) with an $r^2 = .087$. This prediction is mildly significant and is inconsistent with the current hypotheses. This suggests that

initial level of abstinence self-efficacy overwhelmed the predictive ability of any other variable entered into the equation.

To address this, a second stepwise linear regression was conducted, deleting admission abstinence self-efficacy in the equation. When ignoring the effect of initial levels of efficacy, it was observed that participation in AA during and 2-months after treatment were the sole predictors of abstinence self-efficacy at 2-month follow-up ($F(1,97) = 4.169, p < .044, B = .203$) with an r^2 of .041. The correlation between AA participation and abstinence self-efficacy was positive and significant at $r = .203$. Although a mild correlation, this supports the hypothesis that increased participation in AA will contribute to an increased abstinence self-efficacy.

Hypothesis 9. High participation in AA in treatment and in the 2-months following treatment will predict low learned helplessness at 2-months posttreatment.

A stepwise linear regression was conducted with learned helplessness at 2-month follow-up as the criterion variable. The predictors were admission learned helplessness, previous participation in treatment, and participation in AA while in treatment and the 2-months following treatment. Other admission data, alcohol problems, and days drinking were left out due to their high correlations with each other. Admission learned helplessness and previous treatment episodes were both significant predictors of learned helplessness at 2-month follow-up, with learned helplessness being entered into the equation first ($F(1,99) = 49.46, p < .000, B = .577$) with an r^2 of .333 and previous treatment episodes being entered into the equation second ($F(2,98) = 31.75, p < .000, B = .246$) with an r^2 of .393. The change in r^2 that was added by entering in previous treatment episodes was .060. This indicates that number of

previous treatment episodes added 6% of the explained variance beyond admission learned helplessness. These results do not support this hypothesis of the study and suggest that individuals who reported lower learned helplessness at admission were more likely to report lower learned helplessness at follow-up. Interestingly, individuals who reported a more extensive treatment history showed an increase in learned helplessness at follow-up. This suggests that individuals who have attempted to stop drinking on multiple occasions may develop a sense of helplessness with repeated failures.

Chapter 4

Discussion

Hypotheses concerning admission variables were supported by the data. Individuals with lower abstinence self-efficacy at admission were more likely to have more severe alcohol-related problems, more days with alcohol-related problems, and more previous days drinking as reported upon admission. These results are consistent with findings by Skutle (1998), who found that individuals with more severe alcohol problems were more likely to have low abstinence self-efficacy. Individuals who reported high learned helplessness were more likely to have more days with alcohol-related problems in the 30 days prior to admission, but learned helplessness was not related to any other admission variables. This suggests that learned helplessness may be related to problems, but not to actual amount of drinking. Depression was found to be positively correlated with more severe problems, number of days drinking, and number of problem days due to alcohol use at admission. Overall, these data suggest that individuals who report low abstinence self-efficacy and high depression are more likely to drink alcohol and have alcohol-related problems. This is consistent with research that suggests that alcohol use is related to depressive symptoms (Carpenter & Hasin, 1999; Gilman & Abraham, 2001; Holahan et al., 2003; Sellman & Joyce, 1996). The correlations observed were modest, but suggest significant relationships between these variables.

Consistent with findings supporting the value of treatment, improvements in outcome measures occurred as time increased. Abstinence self-efficacy significantly increased at both end-of-treatment and at 2-month follow-up, while learned

helplessness and depression both significantly decreased from baseline data to the end-of-treatment. Learned helplessness decreased from end-of-treatment to 2-month follow-up, but the results were not significant. These findings suggest that treatment, or at least participation in treatment, had an effect on psychosocial outcomes that have been shown to be predictive of positive outcomes (Ilgen et al., 2005). Changes in these variables over time could also be due to other factors such as maturation. The significant positive changes on these measures over time allowed for an analysis of how these factors' changes might be influenced by participation in AA, as well as by other admission variables.

Interestingly, number of previous treatment attempts and abstinence self-efficacy were related to participation in AA groups while in treatment. The more previous treatment episodes, the less likely an individual was to participate in AA. Individuals who reported lower abstinence self-efficacy were more likely to participate in AA. It is likely that individuals with low abstinence self-efficacy are more likely to participate in any type of therapeutic activity to learn skills and ideas to address their alcohol problems. Since they believe that they cannot refrain from alcohol use, they are looking for any method to stop using. The modest findings may be attributable to motivational factors that led individuals to participate in meetings.

Individuals with more previous treatment episodes are likely to have had prior exposure to AA meetings and the 12-step philosophy. Therefore, these individuals may have either attempted to stop drinking through AA in the past and were not successful or have been turned off by AA through repeated exposure to the AA message. Also, these individuals may have developed a sense of helplessness that AA will not lead

them to sobriety, as a result of a perceived non contingency between AA participation and sobriety. This is supported by Timko et al. (2006), where individuals with significant prior AA attendance were less likely to participate in AA than individuals with no or limited prior attendance. Individuals who have attempted methods to stop drinking and failed multiple times, as would be expected by an individual seeking inpatient treatment after multiple prior attempts, are less likely to attempt those methods again and to develop an AA learned helplessness. Further, individuals who have limited treatment experiences may be open to any methods or activities that may be beneficial, which may have increased participation in AA for those individuals.

Another approach to looking at this data is that it takes multiple treatment attempts and episodes before individuals attain long-term abstinence. Dennis, Scott, Funk, and Foss (2005) conducted a longitudinal study on number of treatment episodes and attainment of abstinence since first and last use of a substance. Multiple treatment episodes over time appeared to be common in this sample of individuals, with males and people who started using before the age of 21 having longer periods of use and more treatment episodes. Dennis and colleagues suggest that this indicates that substance use problems are chronic and that long-term treatment models are needed. Conversely, the fact that multiple treatment episodes are needed may be an indictment of the treatment system and the treatment approaches that are dominated by 12-step programs.

Participation in AA as a predictor

The results of this study clearly indicate that the largest predictors of end-of-treatment and 2-month follow-up outcome variables are the variables themselves at admission. This is to be somewhat expected, but as mentioned above, there were significant changes in abstinence self-efficacy, learned helplessness, and depression over time. This suggests that some other variable induced change in these variables. However, participation in AA, either in treatment or out of treatment, does not appear to be a significant predictor of these outcome variables.

Participation in AA while in treatment did predict end-of-treatment learned helplessness after admission learned helplessness and previous participation in treatment were entered into the equation. Contrary to the hypothesis, more participation in AA led to an increase in learned helplessness. This could be consistent with the AA philosophy that the individual is powerless over alcohol use. Number of previous treatment episodes was also a significant predictor of learned helplessness at 2-month follow-up after admission learned helplessness was entered into the equation. This finding indicates that even after treatment and changes in learned helplessness occur, individuals with more previous treatment episodes are more likely to have high learned helplessness. This is consistent with learned helplessness theory, where the more attempts an individual makes at a task where they are unsuccessful, the more likely they believe they will not be successful at the task (Seligman & Maier, 1967). Therefore, the more prior unsuccessful attempts an individual makes to stop their alcohol use, the more helpless they will become about remaining abstinent from alcohol.

The finding that learned helplessness increases with number of treatment episodes supports the idea of the abstinence violation effect proposed by Marlatt and

Gordon (1985) in their relapse prevention model. According to Marlatt and Gordon, the abstinence violation effect occurs after an individual attains a period of abstinence, but then slips up and uses alcohol or an illicit substance on one occasion. As a result of this slip up, the individual may manifest a sense of guilt, negative emotions, and an internal and stable attributional style towards their inability to maintain abstinence. This leads to a decrease in the individual's self-efficacy to maintain abstinence. Marlatt and Gordon suggest that this reduction in self-efficacy leads to increased use after a period of abstinence. Research on self-efficacy and the abstinence violation effect have supported this hypothesis in individuals with alcohol problems (Collins & Lapp, 1991).

Individuals who score high on learned helplessness are likely to have more internal, stable, and global attributions for negative life events (Sweeney et al., 1986). In the current study, individuals with more previous treatment episodes were more likely to have an increase in helplessness at 2-month follow-up. This may suggest that they have violated abstinence rules more often and continue to see themselves as failures when it comes to controlling their drinking. Conversely, no effect was found for decreases in abstinence self-efficacy as the result of more treatment attempts. This may be due to differences in the measures and the more global nature of the LHS (Quinless & Nelson, 1988). These individuals may have a belief that they are failing at life in general and with each attempt they make to change, they become more helpless. Also, individuals who have been in treatment previously may have high self-efficacy that they can maintain periods of abstinence, but may have become helpless in their ability to maintain constant and consistent abstinence from alcohol.

When admission abstinence self-efficacy was left out of the equation in the prediction of abstinence self-efficacy at 2-month follow-up, AA participation positively predicted abstinence self-efficacy, at 2-month follow-up. As participation in AA increased, abstinence self-efficacy increased. This finding is in support of the hypotheses that more participation in AA will lead to an increase in abstinence self-efficacy. Contrary to the predictions of AA and Fiorentine and Hillhouse (2003), participation in AA may lead to increases in abstinence self-efficacy. This finding is counter to the message of AA, which suggests that individuals need to recognize that they are unable to control their drinking and need to remain abstinent. Participation in AA may be considered an active coping strategy, where the individual receives social support and learns to remain abstinent from alcohol. Therefore, what is helpful about AA may not be the message, but the help and support of sponsors and other members. Therefore, participation in any type of social support group may be helpful for individuals who want to stop or reduce their use of alcohol. Also, the fact that AA participation during treatment did not predict end-of-treatment self-efficacy, but AA participation in and out of treatment predicted abstinence self-efficacy at follow-up, supports social learning theory assumptions (Bandura, 1977; Marlatt & Gordon, 1985). When an individual has success with a behavior, they will have more confidence that they can engage in the behavior and that the behavior will be successful. In other words, this population's self-efficacy may have improved due to their effective and successful participation in AA out of treatment, where they had access to alcohol and were able to gain confidence that they could refrain from alcohol use. However, these findings should be taken with caution, given the mild correlation found between the

variables and the fact that admission abstinence self-efficacy was taken out of the equation. The results do not support the idea that AA participation leads to a decrease in abstinence self-efficacy. The limitations of this study prevent us from drawing any firm conclusions, but the results highlight an area of further inquiry in a more controlled study. Also, the findings are contrary to the earlier findings that AA participation predicted an increase in learned helplessness. A possible explanation for this finding is the measure of learned helplessness itself (Quinless & Nelson, 1988). The measure is focused on learned helplessness in general and not specifically on alcohol, as in the case of the measure for abstinence self-efficacy.

Limitations of the Study

Conclusions drawn from this study are limited by a number of factors. There may have been an increase in findings if the number of participants in the study was higher. The number is not low, but the limited number of participants suggests caution when interpreting the power of the findings. More significant findings may have occurred if a larger population was used for the study. Further, while the above sample was larger, delays in administering one of the principal measures (TPSQ) led to a substantially diminished sample, which may have limited the ability to identify a meaningful relationship. This limitation is also the result of participants leaving prematurely and without notice. Interestingly significant findings involving end-of-treatment data were limited. This suggests that an increase in the number of participants may have led to more significant findings.

Participants differed on the number of days that they participated in inpatient treatment. These extra days in treatment may account for changes in outcome variables and likelihood of participating in AA. Due to the different number of days in treatment, individuals who were discharged earlier did not have as many opportunities to participate in AA meetings. This makes it difficult to draw conclusions about data collected at the end of treatment.

Participation in AA was not randomly assigned and participants naturally selected themselves for participation. As a result, participation in AA may be limited in this smaller population or there may be an overabundance of AA participation. As seen by the results, a majority of individuals attended AA on a daily basis during their limited inpatient stays. This artifact may have explained the limited predictive quality of AA participation, in that most individuals had significant participation in AA. Therefore, there was not a way to find any differences between low-frequency and high-frequency participants, as there was a limited range of AA participation. However, future research may continue with this same model, as it allows for more generalizability of naturally occurring AA participation in the real world.

The time period in which AA attendance was measured was short when compared to other studies. Although changes were seen across time points on outcome measures, the time period may not have allowed for significant differences in AA participation or changes in psychosocial measures due to relapse or other life changes and difficulties. However, this may provide information on how AA participation may impact an individual's alcohol use immediately upon attending. High frequency of attendance early has been found to be helpful in previous studies (Connors et al., 2001;

Fiorentine, 1999; Timko et al., 2000). This is important, given the fact that previous studies have found that consistent participation in AA with longer durations predicted better outcomes and increased self-efficacy (Moos & Moos, 2004; Timko et al.).

The study did not analyze drinking behaviors and alcohol problems at the follow-up period due to the minimal amount of relapse reported in the original study (Sterling et al., 2006). Doing so would allow for further analysis on how changes in abstinence self-efficacy and depression influence the use of alcohol. The original study did measure number of days drinking at follow-up, but the number of individuals in this population who returned to even one day of drinking was very minimal (Sterling et al., 2006). In actuality, this indicates that these participants did well in treatment, which is reflected by their positive changes on self-efficacy and learned helplessness measures over time. However, they may have had less severe alcohol problems, which increased their likelihood for success, or there may have been an increase in the amount of relapses over time. Also, the study cannot determine if these positive effects were due to treatment or to participation in AA.

The results on learned helplessness are difficult to determine, given the broad nature of the LHS. The LHS does not just focus on learned helplessness in relation to the use of alcohol, but learned helplessness across multiple life situations and circumstances. The use of the Alcohol Helplessness Scale (AHS; Sitharthan, Hough, Sitharthan, & Kavanagh, 2001) is recommend for future studies that measure helplessness in individuals with alcohol use problems. This scale focuses on helplessness that is related to the use of alcohol and has been found to be a mediator between alcohol dependence and depression (Sitharthan et al.).

Ceiling effects may also have been a problem that limited findings of this study. Individuals were shown to improve on abstinence self-efficacy over the course of treatment, which may have left a limited number of individuals with low abstinence self-efficacy scores. This would make it difficult to find significant differences between those with high and low self-efficacy. However, the drinking outcomes of the original study suggest the increases were justified, given the limited number of individuals who relapsed (Sterling et al., 2006).

A problem with many studies that have been conducted on abstinence self-efficacy is their correlational nature. Increases in abstinence self-efficacy may be an artifact of the change process and general improvements while in treatment. Although some research has found abstinence self-efficacy to mediate outcomes in the past (Morgenstern et al., 1995), more research and experimental studies on abstinence self-efficacy are needed.

Also of concern in this study, as in any study of AA participation, is the retrospective reports of AA participation. Although the TPSQ has shown empirical validity, reports of AA attendance may be skewed both by social desirability effects, incorrectness, and forgetfulness. Social desirability problems may explain some of the high rates of attendance documented in this study. This highlights one of the more general problems with studying the effects of AA. However, advancements in measurements such as the TPSQ may limit some of these problems.

Future Directions

Future research should address some of the limitations that were present in the current study. Major areas that can be addressed are the number of participants involved in the research study and the length of time that AA participation is measured. Changes in these two variables may address the skew towards a high frequency of AA attendance. Research with more participants may also be able to break AA participation down into discrete categories of low, moderate, and high attenders. These approaches may allow for a direct comparison of low and high utilizers of AA.

As mentioned throughout this study, it has been difficult to examine the effectiveness of AA due to the difficulty in randomly assigning participants to AA or non-AA groups. However, attendance at AA while in inpatient treatment or offered by outpatient treatment programs may allow for a randomized analysis. In other words, treatment programs would offer meetings in treatment and require individuals who are enrolled in a study to attend a certain number of meetings per week and provide available sponsors. These programs could also provide groups based on other support systems, such as rational recovery, smart recovery, and moderation management. This approach could possibly examine if it is the message and the working of AA principles that is effective in reducing use or the social aspects of treatment. Related to these types of approaches is a quasi-experimental design as conducted in recent outcomes studies (Finney et al., 1998; Ouimette et al., 1997). This would involve comparing individuals who are participants in AA naturally with individuals who are involved in formal treatment programs. Previous studies have compared approaches to Twelve-Step Facilitation treatment, but not directly to attendance at AA meetings. Analysis of both

drinking changes and changes in learned helplessness and abstinence self-efficacy would also be able to be conducted.

Overall, it appears that even with changes in outcome variables, the variables themselves are the largest predictors of themselves. AA participation was mildly predictive of abstinence self-efficacy at 2-month follow-up and previous participation in treatment was related to less AA participation. Limited sample size and limited time to measure AA participation are likely to have contributed to the limited findings.

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Table 1.

Correlations Between DTCQ Overall Score and Admission Variables (N = 104)

Variable	1	2	3	4
1. DTCQ	—	-.359*	-.294*	-.326*
2. ASI Severity		—	.805*	.773*
3. Number of Days Drinking			—	.430*
4. Number of Days Problems				—

* Statistically significant

Table 2.

Correlations Between LHS Overall Score and Admission Variables (N = 104)

Variable	1	2	3	4
1. LHS	—	.164	.067	.286*
2. ASI Severity		—	.805*	.773*
3. Number of Days Drinking			—	.430*
4. Number of Days Problems				—

*Statistically significant

Table 3.

Correlations Between BDI Scores and Admission Variables (N = 104)

Variable	1	2	3	4
1. BDI	—	.272*	.214*	.345*
2. ASI Severity		—	.805*	.773*
3. Number of Days Drinking			—	.430*
4. Number of Days Problems				—

*Statistically significant

Table 4.

Correlations Between Need for Tx and Admission Variables

Variable	1	2	3	4
Participants (n = 104)				
1. Need for Tx	—	.228*	.381*	.576*
2. ASI Severity		—	.805*	.773*
3. Number of Days Drinking			—	.430*
4. Number of Days Problems				—

*Statistically significant