

THE EFFECT OF PEER RECOVERY SUPPORT SERVICES ON MAINTAINED
SOBRIETY IN INDIVIDUALS WITH ALCOHOL USE DISORDER IN EARLY
RECOVERY

by

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*To my parents, Rita and Josef Urhahn, for teaching me to aim high,
work hard, and to never give up.*

*In Memoriam of Beverly Dale, who touched the lives of so many,
who reminded us every day to be kind, and to always return our shopping carts.*

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It truly takes a village. Much love.

Nicole Urhahn-Schmitt

ABSTRACT

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Alcohol Use Disorder (AUD) remains a major public health concern in the USA. Prevalence of AUD has remained relatively steady, and relapse rates stay high. Evidence shows that most relapse episodes occur within the first 90 to 100 days after initial abstinence, with relapse rates declining substantially afterward.

Research consistently demonstrated that individuals engaged in peer support activities are more likely to maintain recovery or reduce alcohol use. Several factors unrelated to drinking behavior have been identified as contributors to maintained recovery. However, there is limited quantitative research exploring how participation in Peer Recovery Support Services (PRSS) influences drinking behavior during early recovery.

This quantitative, correlational study examined whether PRSS participation decreases the number of Alcohol use episodes among individuals with AUD during the first 90 days after discharge from Inpatient treatment. The study also investigates whether Motivation, Self-efficacy, and Social Connectedness mediate this effect. Participants included individuals who had reached at least 90 days post-discharge from Intensive

Inpatient treatment. They were recruited from Inpatient and Outpatient treatment settings, recovery organizations, and nonprofit programs, using purposive sampling.

A mixed-model regression method incorporating both ordinary least squares (OLS) and negative binomial regression analyses was employed to explore the relationship between PRSS participation and Alcohol use episodes, including Motivation, Self-Efficacy, and Social Connectedness as mediator variables.

Although mediator variables did not significantly explain this relationship, participation in PRSS showed a significant direct effect on decreasing Alcohol use episodes. The findings from this study could inform the development of integrated treatment models that combine PRSS with other approaches to further enhance overall treatment effectiveness.

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CHAPTER ONE

INTRODUCTION

Research on Alcohol Use Disorders (AUD) has been conducted for more than two centuries, and a number of well-researched and evidence-based treatment approaches have been developed as part of that research. However, alcohol abuse continues to be a significant public health concern in the U.S. According to the 2023 National Survey on Drug Use and Health (NSDUH, 2025), 27.1 million adults aged 18 and older were reported as having an AUD in the past year, including 16.4 million men and 10.7 million women. This number represents a slight decrease compared to the findings of the 2024 National Survey on Drug Use and Health (NSDUH, 2024), which reported that approximately 28.1 million adults aged 18 and older were identified as having an AUD in the prior year. The average annual number of deaths resulting from excessive alcohol use rose by about 29%, increasing from 137,927 during 2016–2017 to 178,307 during 2020–2021 (Esser, 2024). Excessive alcohol consumption is also linked to a higher risk of liver disease, heart disease, depression, stroke, and several types of cancer (CDC, 2022).

Furthermore, alcohol use significantly contributes to the economic burden on society. For instance, Sacks et al. (2015) found that excessive drinking cost the U.S. \$249 billion in 2010. The government bore \$100.7 billion (40.4 percent) of these costs. Most of the costs stemmed from workplace productivity losses (72 percent of the total). At the same time, healthcare costs, including inpatient drug treatment, medical services, and emergency care accounted for 11 percent. Among 162 million non–Medicare eligible

enrollees with employer-sponsored health insurance, 2.3 million were diagnosed with SUD. The annual medical expenditure attributable to these cases was \$15,640 per affected enrollee, totaling \$35.3 billion. Notably, AUD accounted for \$10.2 billion of these costs. Therefore, issues related to alcohol abuse remain a serious and unresolved challenge for the U.S. Before summarizing key research that informs this study proposal, a brief history of alcohol abuse and its treatment will be presented.

History of Alcoholism and Concepts of Recovery

During the past 200 years, ways of characterizing alcohol problems and processes to resolve these problems started to emerge, resulting in a disease concept of Alcoholism as an illness with psychosocial, physical, and neurobiological consequences (Mann, 2000; White, 2005). Early conceptualizations varied between the concept of drunkenness as a weakness of character, such as flawed morals and poor decision-making, and a biologically rooted disease to be addressed through medical and psychiatric approaches (White, 2005).

Benjamin Rush and The Temperance Movement

Although alcohol use was generally accepted in the eighteenth century, a proliferation of distilleries between 1780 and 1830 resulted in a tripling of per-capita consumption of alcohol. The educator Antoine Bénézet, for example, warned as early as 1774 of alcohol as a "poison" (Maruti & Adelman, 2019). In 1785, American physician Dr. Benjamin Rush (1785) argued that excessive alcohol use was an illness that required medical treatment. The mounting concerns led to at least three discernible movements.

From a medical perspective, Rush (1785) described chronic drunkenness as an "odious disease" that "resembles certain hereditary, family and contagious disease" (Rush, 1785, p. 8). He proposed potential remedies for "curing the ardent use of spirits on the body and mind." However, he believed that the properties of alcohol, rather than the choice of the individual, were responsible for the illness. While Rush viewed abstinence from distilled spirits as crucial, his approach allowed for the temporary substitution of liquor with beer or wine to decrease the harms of excessive consumption as a part of his cure. He stated that "by the temporary use of these substitutes for spirits, I have never known the transition to sober habits, to be attended with any bad effects but often with permanent health of body, and peace of mind" (p. 32). Rush advocated for humane treatment and argued that individuals could be restored to full health, and return to society through proper medical treatment. He called for the creation of special institutions for the care of the inebriate (Rush, 1812) through medical treatment as well as "religious and moral instruction" (Baumohl, 1990; White, 1998). His proposed cures included cold baths, vomiting, and aversion therapy to the practices of bleeding, blistering, and sweating the patient (White, 1998) to provide a cure.

Medical evidence of the harm caused by excessive drinking also began to emerge. Samuel Woodward and William Sweetser described the consequences of prolonged and repeated intoxication as a chronic and progressive disease (Rush, 1812; Sweetser, 1828; Woodward, 1838). New terminology to describe the condition came into usage, such as intemperance, dipsomania, and chronic Alcoholism. In the 19th century, the term 'Inebriety' was established as a diagnostic term in the medical field (Maruti & Adelman,

2019). Support for the disease concept of inebriety grew, and scientific contributions characterizing alcohol addiction as a chronic, relapsing disease started to appear more frequently (see Marcet, 1868; Brown, 1872; Crothers, 1893; Parrish, 1883). A network of inebriate homes, physician-directed inebriate asylums, and private addiction cure institutes providing specialized physician-directed care, as originally called for by Benjamin Rush, was established (Maruti & Adelman, 2019). When Dr. Samuel Woodward started advocating for the creation of 'inebriate asylums' that provide 'seclusion and recovery,' the concept of recovery as a longer-term process appeared (Woodward, 1836). Later in the century, scientific contributions started to characterize alcohol and other drug addiction as a chronic, relapsing disease (see Marcet, 1868; Brown, 1872; Crothers, 1893; Parrish, 1883).

In contrast to the medical perspective of treating Alcoholism, another approach arising in the nineteenth century attributed Alcoholism to moral shortcomings or a flawed character. For example, in 1827, Reverend Lyman Beecher described the individual who excessively used alcohol as "addicted to sin." He championed the concept of abstinence on both an individual and societal level (Maruti & Adelman, 2019). Some of the institutions that were established viewed inebriety as a sin requiring redemption for the reformation of inebriates. Therefore, treatment was often punitive. Other institutions followed the medical approach, focusing on cures and treating the inebriate more kindly (Anderson, 2022). In 1826, the American Temperance Society was formed to eradicate alcohol use through alcohol education and legal prohibition of alcohol sales. The movement eventually culminated in the passage of the Eighteenth Amendment in 1919,

which made the production, transport, and sale of alcohol (though not the consumption or possession) illegal. This policy change significantly influenced society in the 19th and 20th centuries. Initially, the removal of alcohol from everyday life had a positive effect on families and job industries and improved the lives of Americans. Eventually, the adverse impact on society, such as the rise of organized crime, exceeded its benefits and was repealed in 1933.

Mutual Aid Groups

In addition to a medical approach that aimed to cure the individual or a moral approach employing treatment methods that were more punitive or restrictive (Anderson, 2022), mutual support groups began to form. These groups represented a new approach based on the benefits of belonging to a community, thus differing from current treatment interventions focused on the individual. The proposed treatment included sharing experiences with others with similar struggles and supporting one another in treatment and recovery. The first Mutual Aid Groups emerged as early as the 18th century, and Native Americans organized the first abstinence-based mutual aid societies in America (White, 2001). In 1840, the Washingtonian Movement was founded by six individuals who had achieved sobriety from former alcohol use. The premise of their approach was that sobriety could be achieved by developing a strong fellowship of individuals who could support each other's sobriety efforts by sharing their experiences with alcohol and nurturing an "environment of camaraderie." Notably, these principles were eventually incorporated into the Alcoholics Anonymous (AA) organization (Maruti & Adelman, 2019) that was conceived in the 1930s by Dr. Bob Smith and Bill Wilson, two Alcoholics

struggling with achieving sobriety. They articulated a mutual help "program of recovery," comprising 12 steps (AA, 2002, p. 59) for achieving and maintaining lifelong abstinence. Referred to as the "Big Book" (1939), recovery is described as a lifelong journey that involves transformative personal and lifestyle changes that lead to not only abstinence from alcohol but "emotional sobriety" (Wilson, 1958), including improved health, functioning, and overall well-being. Several other mutual-help organizations have emerged since AA was founded, either inspired by or disagreeing with its values. SMART Recovery and LifeRing, for example, pursue a secular approach and endorse Alcohol use in moderation; Celebrate Recovery offers a Bible-based and Christ-centered approach to recovery. These AA alternatives have received limited attention but adopted a similar social orientation and group format as AA (Kelly & White, 2012).

The Disease Concept of Alcoholism

The American Medical Association (AMA) officially recognized Alcoholism as a nonpsychiatric disease in 1956. This acknowledgment was an essential step in reducing the social stigma previously associated with Alcoholism as a moral shortcoming. Jellinek (1960) further developed the concept of "alcoholism" as a progressive chronic disease. He proposed five types of alcoholics he called "species." Jellinek considered only two of these species, gamma alcoholics and delta alcoholics, as exhibiting alcohol dependence. These two types differed primarily in terms of etiologic factors (psychological vs. social and economic influences) and alcoholic process elements (loss of control vs. an inability to abstain from alcohol consumption). Jellinek's work sparked further empirical research on typologies that took into consideration criteria such as gender, family history of

Alcoholism, or coexisting psychopathology (Babor, 1996). In turn, Edwards and Gross (1976) expanded the disease concept by developing the "alcohol dependence syndrome," defined as a narrowing of the drinking repertoire, increased salience of the need to drink over competing needs and responsibilities, tolerance and withdrawal symptoms, and reinstatement of dependence after abstinence.

As the disease concept gained acceptance, more nuanced perspectives about alcohol dependence appeared. In the late 1970s, Pattison, M. B. Sobell, and L. C. Sobell (1977) reconceptualized alcohol dependence as occurring on a spectrum spanning from non-pathological to severely pathological problem development. They concluded that excessive use of alcohol "follows variable patterns over time and does not necessarily proceed inexorably to severe fatal stages" (Pattison, Sobell & Sobell, 1977), as had previously been postulated by Jellinek (1960). Results from the longitudinal study *The Natural History of Alcoholism* conducted by George Vaillant (1996) over several decades starting in 1940 indicated that alcohol abuse could continue for decades without remission or progression of symptoms. The study aimed to examine the clinical course of Alcoholism. He concluded that controlled drinking was a valid goal but that a return to controlled drinking without eventual relapse was unlikely (Vaillant, 1996). Pattison, Sobell, and Sobell (1977) and Jellinek (1960) reached similar conclusions, being among the first to infer that achieving total abstinence was not an absolute necessity for treatment and instead, moderation of use (i.e., controlled drinking) was a reasonable goal. Their arguments concerning moderation were considered controversial but have since been widely replicated and extended (Witkiewitz & Tucker, 2020).

Contemporary Debates About Alcohol Dependence and Recovery

The findings of Pattinson, Sobell & Sobell (1977) and Vaillant's longitudinal study on recovery led to a broader discussion that, on the one hand, focuses on alcohol treatment and treatment goals and, on the other hand, on what constitutes recovery in general. As the disease concept of Alcoholism evolved, describing AUD as a chronic condition requiring long-term care rather than as an acute illness that can be 'cured,' drinking in moderation emerged as a valid recovery goal rather than complete abstinence. Consequently, varying stakeholder groups attempted to define recovery reflecting this development (White, 2006). Despite such efforts, there has not been a general consensus about the definition of recovery. For example, traditional stakeholder groups may use the diagnostic criteria from the DSM-5 (5th ed.; DSM–5; American Psychiatric Association, 2013), but other stakeholder groups may use the National Institute on Alcohol Abuse and Alcoholism (NIAAA) as a guiding principle (Hagman et al., 2022; Tucker & Witkiewitz, 2022; NIAAA, 2020). Remission from AUD, as defined by DSM-5 criteria, requires that the individual not meet any AUD criteria (excluding Craving). The definition of recovery proposed by NIAAA (2020) includes remission according to DSM-5 criteria but, at the same time, does not conceptualize recovery solely in terms of abstinence. Instead, it emphasizes cessation from heavy drinking, characterized as drinking no more than fourteen standard drinks per week or four drinks on a single day for biological males and no more than seven drinks per week or three drinks on a single day for biological females. NIAAA's definition focuses on limiting alcohol intake to prevent or decrease the

harmful consequences of use by reducing heavy drinking. Thus, there is no consensus that complete abstinence is a necessary goal of recovery.

Indeed, in their attempts to define recovery, different stakeholder groups emphasize either "Abstinence/Drinking" or "life functioning and context" as primary goals (Marlatt & Witkiewitz, 2010; Witkiewitz et al., 2020, p. 5). For example, the Substance Abuse and Mental Health Services Administration (SAMHSA) advanced a working definition of recovery as "a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential" (SAMHSA, 2012, p. 3) and established four holistic dimensions that support a life in recovery: Health: a process for overcoming or managing one's disease(s), symptoms, or recovery as the individual makes informed, healthy choices that support physical and emotional well-being; Home: having a stable and safe place to live; Purpose: meaningful daily activities and the independence, income, and resources to participate in society; and Community: relationships and social networks that provide support, friendship, love, and hope (SAMHSA, 2012). In contrast, the Betty Ford Institute Consensus Panel (2007) defined recovery as "a voluntarily maintained lifestyle characterized by sobriety, personal health, and citizenship" (p. 222). While these two approaches appear conflicting, they also have critical factors in common. For instance, several of the eleven diagnostic criteria in the DSM-5 are associated with clinically meaningful changes in psychosocial functioning and well-being (Hagman et al., 2022). Both approaches acknowledge the points of Hagman et al. (2022) that biopsychosocial

functioning, quality of life, and improved well-being are integral to achieving and maintaining success in recovery.

Related to the NIAAA perspective of recovery, some treatment aims explicitly target harm reduction strategies as a viable part of long-term planning. Essentially, harm reduction seeks to reduce problems related to drinking behaviors without requiring abstinence as the central goal of recovery (Marlatt & Witkiewitz, 2010). Treatment goals based on harm reduction approaches could aim to reduce the amount of alcohol consumed. However, they could also focus on limiting the attendant risky behaviors (e.g., by avoiding driving under the influence) without decreasing the level of alcohol intake. Perhaps the most controversial view about treatment is that recovery occurs naturally (i.e., natural recovery), without formal treatment or support from mutual-aid groups), and does not require complete abstinence. Despite assertions made that "natural recoveries" are the "predominant pathway to problem resolution" (Tucker, Chandler & Witkiewitz, 2020, p.4), accurate prevalence estimates are limited, as available data does not specify whether individuals who have resolved their problematic alcohol use without formal treatment fulfilled the diagnostic criteria of AUD, the severity of alcohol use, and number of recovery attempts. (Kelly et al., 2019).

A Look at Current Treatment

Notwithstanding the contemporary debates about alcohol use, dependence, and recovery, most treatment is based on a medical model approach whereby substance use disorders are regarded as chronic conditions and predominantly focus on reducing alcohol use. As the individual spends a limited time in treatment, the recovery process

can merely be initiated and possibly involves multiple cycles of treatment, periods of non-use, and relapse as part of a journey to recovery (Bergman et al., 2015; Dennis et al., 2007; Dennis et al., 2005; McLellan et al., 2000); Substance Abuse and Mental Health Services Administration (SAMHSA) 2014; White, 2012).

Several state and federal institutions and policies have emerged to address this concept of Alcoholism and treatment. The Addiction Research Center was founded in 1948 and served as a precursor for the formation of the National Institute on Drug Abuse (NIDA) and now the National Institute of Health (NIH). The National Institute on Alcohol Abuse and Alcoholism (NIAAA) was created in 1971 as part of the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act, a federal program that was enacted into law in 1970 to address the prevention and treatment of alcohol-related problems. In 1992, the Substance Abuse and Mental Health Services Administration (SAMHSA) was established by Congress to improve the quality and availability of treatment and rehabilitative services. The work of these institutions has been instrumental in furthering the scientific study and the development of treatment for alcohol use (Maruti & Adelman, 2019), notably the creation of guidelines used to determine the appropriate level of care to best meet the needs of the individual depending on their specific conditions. In the 1990s, the American Society of Addiction Medicine (ASAM) developed the ASAM patient placement criteria (now known as ASAM Criteria), which consist of a widely used set of guidelines for placement, continued stay, and transfer/discharge of patients with addiction and co-occurring conditions (ASAM, 2013). The Criteria are based on ASAM's definition of

recovery, which describes recovery as a "process of sustained action that addresses the biological, psychological, social, and spiritual disturbances inherent in addiction." The definition goes on to explain that "Recovery aims to improve the quality of life by seeking balance and healing in all aspects of health and wellness while addressing an individual's consistent pursuit of abstinence, impairment in behavioral control, dealing with cravings, recognizing problems in one's behavior and interpersonal relationships, and dealing more effectively with emotional responses." (ASAM, 2005, 2013)

Currently, addiction treatment facilities across most states in the USA structure treatment based on four Levels of Care as laid out in the ASAM Criteria, ranging from the most severe (Level 4) to the least severe (Level 1). Level 4 refers to Medically Managed Intensive Inpatient Services, which can include medical detoxification and/or 24-hour medical support for patients at severe risk of medical complications such as seizures. Level 3 encompasses Residential/Inpatient Services of high or low intensity. Level 3 services are clinically managed services that can take place in Residential treatment settings, Recovery Centers, or Sober living facilities, e.g., Halfway Houses. Level 2 includes Intensive Outpatient (IOP)/Partial Hospitalization (PHP) Services. PHP and IOP treatments comprise six to 20 service hours per week. Level 1 consists of Outpatient treatment of less than six hours per week, e.g., through outpatient counseling in an office setting. In summary, the ASAM Criteria help treatment providers ensure that clients receive the treatment that best fits their needs according to their current state of recovery and that resources are used efficiently (ASAM, 2023).

Levels 3 and 4: Acute Treatment

An estimated 50% of individuals experience some withdrawal when they cease drinking (Witkiewitz et al., 2019), and a reported 20% require help for detoxification (SAMHSA, 2014). As significant and highly uncomfortable withdrawal symptoms can occur during alcohol cessation, individuals may require medical management and/or detoxification in a Level 4 inpatient facility. Medical treatment may occur either in an outpatient or, when clinically indicated, in an inpatient setting or require hospitalization. In many cases, clinical monitoring may suffice (Witkiewitz et al., 2019). Once the patient is stabilized, the recommended course of treatment is to transition to residential treatment (Level 3), a crucial step to initiate recovery. Several processes facilitate this critical transition to residential treatment, including coordinated care between Level 4 and Level 3 facilities, ideally located in one setting that can provide case management and efforts to maintain engagement with the healthcare system if patients are waitlisted or resisting treatment. Peer support services can be enlisted to facilitate the transition from detoxification to treatment by Peer Support Specialist employees or non-employee 12-step group members (Timko et al., 2016). The patient will then participate in the programming in the respective Level 3 treatment facility, mainly focusing on reducing or eliminating drug use, which typically ranges between four and 28 days. Interventions often include self-monitoring of alcohol use, increasing awareness of high-risk situations, identifying triggers and craving cues, and training in cognitive and behavioral techniques to help clients cope with potential drinking situations, life skills training, communication training, to prepare the client as best as possible for the time following inpatient

treatment. Many treatment facilities provide 12-Step Facilitation programs (TSF), an evidence-based, manualized therapy to acquaint the individual with 12-step programs and facilitate step work as part of their treatment. The aim is to promote seamless continuation of participation in 12-step programs following inpatient treatment.

Level 2: Intensive Outpatient Treatment

Following the intensive Level 3 or even Level 4 residential treatment, clients often discontinue further treatment instead of transitioning to outpatient services. However, participation in ongoing Level 2 treatment, often referred to as 'Aftercare,' is strongly encouraged. Standard options for aftercare include residential rehabilitation in sober living environments like halfway or three-quarter houses or participation in Intensive Outpatient Programs (IOP) or PHP that provide counseling services. Level 2 treatment helps bridge the gap between strictly regulated residential treatment and returning to everyday life with all its responsibilities. Therefore, access to ongoing engagement in the service sector is critical to build on gains achieved during residential treatment (MacLean et al., 2022). During this stage of treatment, the focus shifts from mere abstinence to a variety of non-consumption objectives of recovery. Treatment in a PHP environment, also referred to as 'Daycare,' generally provides 20 or more hours of clinically intensive programming per week and on a daily basis (ASAM, 2013). It can provide psychiatric and medical services. The programming is similar to residential treatment and includes individual, group, and family therapies. Treatment in IOPs typically involves group counseling, taking place on several days per week. They are designed to help the individual learn early-stage relapse management and coping

strategies, to ensure that the person has psychosocial support, and to address individual symptoms and needs. IOP services enable the client to stay in treatment longer and have the opportunity to engage and interact with other people struggling with the same issues while staying in their familial home environment and continuing with their day-to-day lives. IOPs also support individuals' resocialization with their social support networks and allow individuals to maintain employment.

Residential rehabilitation or drug-free housing, such as Sober Living and Halfway Houses, is designed to support recovery risk avoidance and encourage employment. Participants receive treatment support around the clock while living with peers and having the opportunity to learn from each other. Mutual support in a sober living environment gives the person a safe environment to practice coping and life skills and develop social and interpersonal skills. Both residential rehabilitation (e.g., Halfway Houses) and IOP modalities can also serve as alternatives to inpatient and residential treatment for those not having participated in Level 3 or 4 treatment. These programs provide direct services for people with substance use disorders who do not require medical detoxification or 24-hour supervision. Participants live at home and can continue with their day-to-day lives.

Level 1: Outpatient Treatment

Treatment taking place on Levels 4 to 2 spans a limited timeframe and serves to initiate the recovery process. The ASAM Criteria define Level 1 care as individual or group therapy that includes less than six hours per week in an outpatient setting (ASAM, 2013) but do not identify or specify any further outpatient treatment. Level 1 outpatient

care, according to ASAM Criteria, does not consider individual needs, such as the intensity, frequency, or urgency of treatment required to maintain sobriety. Therefore, current treatment approaches are beginning to integrate different treatment modalities to enhance outpatient services. In addition to participating in 12-step and/or mutual aid groups, the continuation of care services receives growing attention.

These services are often more self-directed and can occur across diverse pathways besides Level 1 outpatient treatment. Of these assisted pathways, recovery community organizations and Peer-Based Recovery Services within the community represent an evolving service method (Ashford et al., 2018). Peer providers are a rapidly growing workforce with considerable promise to help alleviate behavioral health workforce shortages by supporting consumers in attaining and maintaining long-term recovery (Chapman, 2018). Peer support programs are administered through formal and specialized roles by individuals with personal experience in the recovery process (White, 2009). They may exist as a distinct service within a physical setting, such as a sober living environment or recovery center, as well as community-based services, such as Recovery Community Organizations. These services might support the recovery process in the longer term (Laudet & Humphreys, 2013).

Limitations of Treatment Implementation and Efficacy

The development of the ASAM Criteria has contributed to structuring AUD treatment. This new structure enables practitioners and facilities to provide the appropriate level of care as the individual enters and proceeds through treatment. However, there are severe limitations, including treatment retention and implementation.

First, while the ASAM Criteria enable a comprehensive assessment of the individual entering treatment to determine the appropriate level of care at the time, the client may still drop out or discontinue treatment for several reasons, rather than following the recommended course of treatment. Several barriers may disrupt the continuation of treatment and seamless handover between the respective levels of care, especially between inpatient Level 3 and outpatient Level 2 (aftercare). These can be patient-, program-, and system-level factors. At the patient level, this can include geographical distance, lack of transportation, responsibilities such as employment or childcare, financial consequences of sustained treatment, or a challenging living environment. At a program level, a lack of Aftercare planning or access to treatment, for example, long wait times between levels of care, can prevent individuals from entering aftercare treatment. System-level barriers are primarily associated with limited integration between services, which hinders the continuation of care or client retention. Although successful transitions from detoxification to substance use disorder treatment are associated with improved outcomes, many patients do not continue treatment after detoxification (Timko et al., 2016). Evidence from populations receiving formal treatment suggests that completion can be crucial to sustaining recovery, whereas treatment program attrition is associated with relapse (Betancourt et al., 2021; Costa et al., 2020). Therefore, increasing utilization and completion of SUD treatment is a significant strategy to decrease relapses, morbidity, and mortality (Waite et al., 2013). For example, a study on the utilization of IOP Programs conducted by Costa et al. (2020) showed a positive relationship between the level of engagement and connection to care after an IOP episode. Over 60% of study

members across all cohorts who continued to engage with continued care options after an IOP episode could step down to a lower level of care (Costa et al., 2020).

Another limitation involves the long-term success of evidence-based treatments. There are several evidence-based therapies consistently recommended for AUD that are utilized in inpatient and outpatient settings. These include cognitive behavioral therapy (CBT), Motivational Interviewing (MI), and Motivational Enhancement Therapy (MET) as individual therapy modalities. 12-step facilitation (Witkiewitz, Litten & Leggio, 2019), a manualized treatment approach that is part of inpatient treatment, helps connect inpatient treatment to continued care. NIDA describes 12-step facilitation as an active engagement strategy designed to increase the likelihood of a person with substance abuse becoming affiliated with and actively involved in 12-step mutual aid groups, promoting abstinence. Kelly et al. (2020) found that, in many cases, clinically delivered TSF interventions designed to increase AA participation lead to better outcomes over the subsequent months, for up to three years, and produce higher rates of continuous abstinence. They emphasize that this effect is primarily achieved by promoting increased AA participation beyond the conclusion of the TSF intervention.

CBT and Motivational approaches involve intensive one-on-one sessions between the client with AUD and the therapist. The client and therapist work on developing and teaching strategies to overcome the desire to seek out and consume alcohol and to deal with situations that might trigger these desires. Individuals receiving CBT treatment learn to identify and correct problematic behaviors by applying various skills, such as learning how to delay and distract cravings by engaging in constructive activities and other

positive means (Litt et al., 2018; Magill et al., 2019). A number of studies have shown that motivational interviewing (MI) is effective in facilitating change in AUD treatment (Frost et al., 2018), using specific methods of communication to enhance the person's intrinsic motivation to change and, by extension, helping patients consider continuing treatment (Timko et al., 2016). While there is evidence that each of those treatments has the potential to improve the odds of recovery significantly, none stands out for the treatment of AUD (Ray et al., 2019). Moreover, evidence for the long-term effects of each of these treatments is largely unknown.

In the search for better outcomes, current treatment integrates medication with other types of behavioral therapies in an attempt to decrease alcohol use, with limited success. The U.S. Food and Drug Administration (FDA) has only approved three drugs for use in AUD (Witkiewitz, Litten, and Leggio, 2019; Burnette et al., 2021), which are reportedly only modestly effective and underutilized (Burnette et al., 2021). These include Naltrexone, which blocks opioid receptors that are involved in the rewarding effects of drinking and Craving for alcohol. Acamprosate is utilized to reduce symptoms of protracted withdrawal, such as insomnia, anxiety, restlessness, and dysphoria. Acamprosate has been shown to help dependent drinkers maintain abstinence for several weeks to months, and it may be more effective in patients with severe dependence. Disulfiram produces a very unpleasant reaction that includes flushing, nausea, and palpitations if a person drinks alcohol. The utility and effectiveness of disulfiram are considered limited due to generally poor compliance. However, Disulfiram can be effective among highly motivated patients, who use it as needed for high-risk situations,

such as social occasions where alcohol is present. Historically, pharmacotherapies have seen limited use in the treatment of AUD, partially due to a lack of addiction treatment training for medical professionals, lack of awareness regarding medication options, reluctance to prescribe and take medications, perceived low efficacy of medication, and stigma surrounding treatment (Burnette et al., 2021). Therefore, the pharmacological treatment options currently available complement AUD treatment following the ASAM model only partially.

Mind the Gap: What Happens In Early Recovery

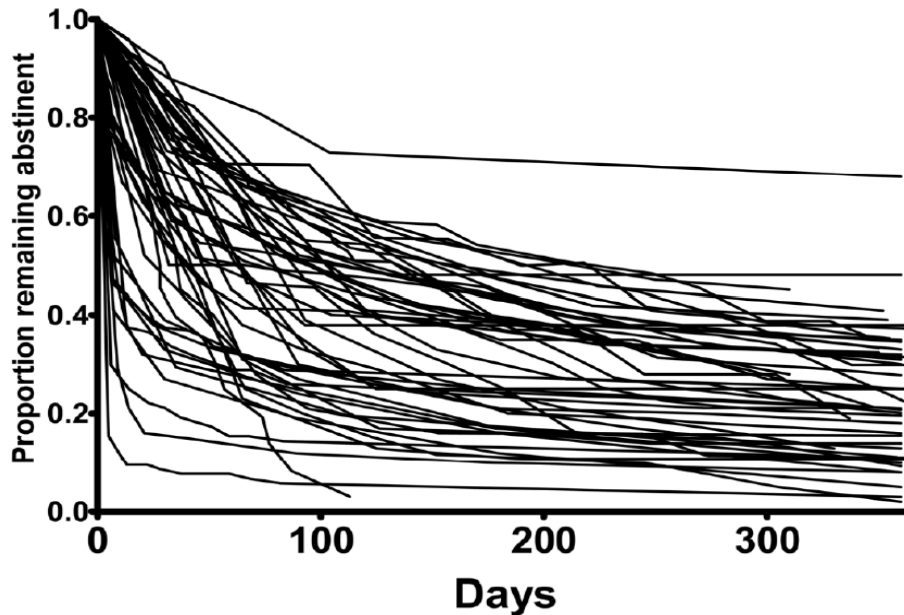
Although the benefits of treatments have been reported after clients are discharged from inpatient settings, relapse most often happens in a short time frame after formal treatment. For instance, Kirshenbaum et al. (2009) analyzed 20 studies on alcohol and tobacco treatment to examine whether relapse post-treatment follows a specific pattern (see Figure 1). As a result of their survival analysis, they found that the majority of patients relapsed early post-treatment, around the 90 to 100 day mark. After 100 days of uninterrupted abstinence, the relapse rate decelerated dramatically. Maisto et al. (2014) reported similar findings, viewing the first 90 days following the initiation of abstinence or planned reductions in alcohol use to be crucial for successful longer-term remission from AUD. At the same time, dropout is a critical problem, especially during the first three months of substance use care (Graff et al., 2009). Dropout rates prior to reaching three months can be 50% or more (Palmer et al., 2009), and three months of treatment appears to be the minimum needed to see symptom improvement (Katz et al., 2004; Simpson & Joe, 2004). These findings comport with previous research conducted by

Maisto et al. (1998, 2002), which showed that sustained abstinence during the twelve months following the initiation or completion of AUD treatment was associated with better long-term functioning (Maisto et al., 1998, 2002). McLellan et al. (2000) found that 40% to 60% of patients treated for alcohol or other drug dependence return to active substance use within a year following treatment discharge. The likelihood of relapse changes and is estimated to be very high in early recovery (50–70%) but reduces to 15% in stable recovery (Best 2019).

These more recent research results are congruent with findings from Vaillant's longitudinal study on the natural history of Alcoholism, stating that individuals with Alcohol Abuse and Dependence are less likely to relapse after a timeframe of 18 months and that relapse is unlikely to occur after five years of sobriety (Vaillant, 1996). In contrast, a return to controlled drinking without eventual relapse was unlikely. In summary, accumulating evidence strongly suggests a critical period spanning the first 90-100 days post-treatment. The majority of studies demonstrate a continuously decreasing hazard rate, providing some support for the notion that practicing abstinence results in better treatment outcomes. The shape of the curve shown in Figure 1 suggests a mechanism that influences the slowing of the relapse rate after a certain point in time following treatment.

Figure 1

Relapse Times and Trajectories in the First Year of Recovery



Time abstinent may interact with other variables, such as treatment type, to bolster relapse resistance independent of drug class, population, or, respectively, risk factors that occur. There may be common factors associated with the relapse pattern, such as support, goal direction, structure, and progress monitoring. Changes in processes such as increased self-efficacy, self-confidence, and effective coping skills, as described in research and documented lived experience across 12-step programs, alternative mutual-help organizations, and treatments (Moos, 2007, 2008), may facilitate recovery.

Both Vaillant's longitudinal and cross-sectional studies provide evidence that the relapse rate decreases and sustained recovery becomes more likely after a certain period. Therefore, understanding the factors and events occurring in early recovery that predict or explain relapse or recovery is crucial to meeting treatment needs.

Overview of Protective Factors and Risk Factors in Early Recovery

Several determinants influence how an individual continues their path of recovery that may not directly be related to prior treatment. Comprehensive research has been conducted to determine specific factors, traits, or circumstances that foster recovery or lead to relapse. Sliedrecht et al. (2019), for example, identified a broad spectrum of factors, which encompassed psychiatric comorbidity, addiction severity, Craving, negative emotion, use of other substances or high substance availability, health and social factors, such as family and peers being non-supportive of recovery.

To strengthen and address individual protective factors more specifically, researchers and clinicians developed the concept of Recovery Capital, referring to key personal and social resources that a person in recovery can draw upon to initiate and sustain recovery from substance use disorder (Granfield & Cloud, 1999; White & Cloud, 2008; Laudet, 2011). It encompasses various forms of resources that aided successful cessation, including social capital (supportive relationships with family, friends, and peer networks that foster encouragement and accountability), physical capital (tangible resources like financial stability, safe housing, and transportation), human capital (knowledge, skills, physical health, emotional well-being, and coping skills), as well as community recovery capital (access to resources such as recovery-oriented services, safe housing, and supportive environments (Granfield & Cloud, 1999).

A study conducted by Laudet and White (2011) found that protective factors associated with Recovery Capital, such as social support, spirituality, religiousness, life meaning, and 12-step affiliation, improve the ability to respond to stress resulting from

intra and interpersonal challenges and enhance life satisfaction. In another study of individuals who were admitted for alcohol withdrawal to an inpatient ward, Vaillant and colleagues (1983) found that premorbid social stability and Alcoholics Anonymous attendance made independent contributions to sustained abstinence, supporting the importance of social capital resulting from support by family, based on connections formed within the network of AA.

Ample research has been conducted to study the impact of Recovery Capital and single domains and factors on individuals' path of recovery, as identified, e.g., by Laudet and White (2011). Furthermore, several factors have empirically been shown as strong predictors of enhanced recovery. These include, for example, Self-efficacy, described as the belief that one can successfully execute behaviors needed to produce a desired outcome (Bandura, 1977), readiness to change or commitment to change as motivational constructs to progress in recovery (DiClemente, 1999), or to promote a sense of well-being and connection with social groups, including family, peers, or co-workers, suggesting the clinical importance of developing a high degree of abstinence self-efficacy. Peer recovery support can play a crucial role in fostering and providing emotional, social, and practical resources that promote long-term recovery (Eddie et al., 2019).

Mutual Support and Social Connectedness

Participation in Mutual Aid Organizations like AA and other 12-step programs provides a sense of community and support for people struggling to foster social connections in a less formal environment. Regular, if not daily, participation in AA and engagement in AA activities or other mutual aid groups teaches coping strategies. It

encourages activities to replace drinking habits that may improve Quality of Life and support a healthier lifestyle (Costello et al., 2019). Even if detoxification and ensuing treatment may have resulted in positive outcomes according to the respective study analyzed, attending AA appeared to be a critical factor for individuals to remain in recovery (Vaillant, 1996). Both the fellowship of AA and Peer Support Workers provide respect, mutual understanding, and empowerment for people in recovery to stay engaged in the recovery process, contributing significantly to social capital as part of an individual's Recovery Capital.

Conceptual Framework

Social Learning Theory (SLT) provides a helpful framework for understanding how PRSS (Peer Recovery Support Services), as a new model of service delivery, can support behavior change and sustained recovery in individuals with Substance and Alcohol Use Disorders. As proposed by Albert Bandura (1977), the theory posits that people learn new behaviors by observing others and imitating the behaviors, attitudes, and emotional reactions within the same social contexts rather than solely through direct experience. This process of vicarious learning can be observed in various social contexts and structures beyond Alcohol and Substance Use Disorders, such as education, health promotion, or criminal justice (Akers, 2009). Bandura stated that if individuals only learned from their own experiences, “the process of cognitive and social development would be greatly retarded, not to mention exceedingly tedious and hazardous” (p. 21). Observing others enables individuals to extend their skills and gain new insights. Bandura (1989) explains that people draw upon personal experiences and the experiences

of others who are “well-informed on the matters of concern” to develop their competency and adjust their behavior (p. 13).

The recovery experience is not an individual journey but a collective effort encompassing aspects of social engagement and connectedness, as SLT has explained. It also emphasizes cognitive processing and self-efficacy beliefs that support motivation to change behaviors. Both theories emphasize motivation, self-efficacy beliefs, and social connectedness as essential factors in the recovery process. To highlight the interaction between personal, behavioral, and environmental factors and to expand on the social component of SLT, Bandura (1986) later proposed Social Cognitive Theory (SCT). He described SCT as a “multifaceted causal structure in which self-efficacy beliefs operate together with goals, outcome expectations, and perceived environmental obstacles and facilitators in regulating human motivation, behavior, and well-being” (Bandura, 2004, p. 143). Essentially, SCT is based on the idea that individuals' thoughts, actions, and emotions influence their behavior. Reciprocal social relationships affect and shape these three components (Bandura, 1989). Therefore, SCT builds on SLT by highlighting the cognitive processes that mediate observational learning and the individual's active role in shaping their environment.

This concept aligns with the service idea that is at the core of PRSS, applied by Peer Recovery Workers (PRW) when administering support for individuals with AUD. In their various roles as coaches, advocates, motivators, and supporters, they create a supportive environment that fosters recovery. Through PRSS, individuals can observe others in recovery who model positive behaviors, such as coping strategies and relapse

prevention techniques. This modeling of adaptive recovery-related behaviors fosters positive outcomes. It creates a sense of comfort and safety. Peers that a person associates and interacts with within that specific context model normative definitions, values, and attitudes encouraging a particular favorable behavior (Akers, 2009). Through regular interactions, peer groups create a cycle of positive reinforcement, modeling, and social learning that encourages long-term recovery from Substance and Alcohol Use Disorders.

Problem Statement

AUD continues to represent a significant public health problem in the United States, with an estimated 27.1 million adults ages 18 and older classified as having an AUD (NSDUH, 2025). Despite all treatment efforts, the prevalence of alcohol use in the USA has remained relatively stable (see e.g., Manthey, 2019). Several studies have highlighted that despite the availability of evidence-based treatment modalities, relapse rates among individuals with AUD remain high. Most relapse episodes happen within a limited time frame after discharge from treatment. More specifically, a meta-analysis by Kirshenbaum et al. (2009) showed that the risk of relapse is highest within a 90-100-day timeframe post-treatment and that relapse rates decline drastically after this timeframe. Therefore, a special focus on understanding the needs of individuals during this timeframe is vital to support recovery maintenance.

Purpose of the Study

While factors that potentially play a critical role in sustaining recovery have been identified, such as Self-efficacy, Social Connectedness, and Motivation, limited research is available on the specific mechanisms and circumstances of recovery that lead to

relapse or recovery maintenance during the critical 90 to 100-day period. Additionally, while intensive inpatient and outpatient treatment help initiate recovery, individuals may not yet have developed the necessary skills and traits to sustain or strengthen their recovery as they transition out of acute treatment. Research suggests that a broader spectrum of Continuing Care involving peer support appears to be a promising path to recovery (Tucker et al., 2020).

The purpose of this study is twofold. First, it seeks to address the gap in the literature regarding the correlation between Continuing Care, specifically focusing on Peer Recovery Support Services (PRSS), and recovery maintenance during the critical period when relapse is most statistically prevalent (90–100 days). Second, this study aims to provide a better understanding of PRSS mechanisms by examining whether factors not related to drinking behavior (e.g., Motivation, Self-efficacy, and Social Connectedness) correlate with sustained recovery.

Definition of Key Terms

To provide clarity, key terms and concepts that are referenced throughout this study are as follows:

Alcohol Use Disorder: In the DSM–5, the two DSM–IV disorders, alcohol abuse and alcohol dependence, are merged into a single disorder called Alcohol Use Disorder (AUD) with mild, moderate, and severe sub-classifications. A person meeting any two of the eleven criteria during the same 12-month period would receive a diagnosis of AUD. The severity of AUD—mild, moderate, or severe—is based on the number of criteria met. The updated diagnosis in the DSM-5 removes legal implications (e.g., having been arrested) and adds Craving as a criterion (NIAAA, 2021).

Cognitive behavioral therapy (CBT): a leading behavioral approach for intervention with alcohol or other drug use disorders (Substance Abuse and Mental Health Services Administration, 2014). CBT can be defined as a time-limited, multi-session intervention targeting cognitive, affective, and environmental risks for substance use. It provides training in coping skills to help an individual achieve and maintain abstinence or harm reduction (Magill et al., 2019).

Consumption and Non-Consumption Related Outcomes: Alcohol treatment outcomes refer to the measurable results or changes following an individual's participation in AUD treatment programs. These outcomes can include reductions in alcohol consumption or prolonged periods of abstinence (consumption-based outcomes); or improvements in physical and mental health, enhanced social functioning, and overall quality of life (non-consumption-related outcomes). Treatment outcomes are influenced

by various factors, including treatment modality, patient motivation, social support, and co-occurring disorders (McKay, 2009).

Motivation: Treatment motivation refers to an individual's readiness and willingness to engage in substance use treatment and make behavioral changes. It is a dynamic and evolving process influenced by personal, social, and environmental factors. Motivation can fluctuate, requiring tailored interventions to enhance engagement and support sustained recovery (DiClemente & Prochaska, 1998).

Twelve-Step Facilitation: TSF is a structured, time-limited treatment whose goal is to facilitate active involvement in and use of 12-step fellowships such as Alcoholics Anonymous and Narcotics Anonymous as a means of overcoming problematic alcohol or drug use (Novinski, 2022)

Continuing Care: Continuing Care was viewed as a lower-intensity type of treatment following a more intensive initial period, such as residential care or IOP, used interchangeably with "aftercare" or "step-down care." More recently, goals include solidifying and sustaining "the gains made in the initial phase of treatment, to establish abstinence if it was not already achieved, and to prevent subsequent relapses from worsening to the point that further acute treatment was necessary" (McKay, 2021, p.2). The term Continuing Care will be used to describe recovery-related activities and interventions after Intensive Inpatient and Outpatient treatment (ASAM Levels 4-2).

Mutual Aid Organizations: Organizations such as AA and Narcotics Anonymous (NA) facilitate change by enhancing recovery and supporting social changes in attendees'

networks. These organizations play a crucial recovery-supportive social role and inform continuing care recommendations (Kelly, Stout, Greene, & Slaymaker, 2014).

Peer Recovery Support Services: Non-clinical services provided by individuals with lived experience of substance use recovery to support others in their recovery journey. These services aim to enhance recovery capital by offering emotional, social, and practical assistance, including mentorship, advocacy, and connection to resources such as housing, employment, and healthcare (Eddie et al., 2019).

Recovery Capital: The breadth and depth of internal and external resources that can be drawn upon to initiate and sustain recovery from severe AOD problems (Granfield & Cloud, 1999; Cloud & Granfield, 2004). Recovery capital is conceptually linked to solution-focused therapy, strengths-based case management, recovery management, resilience and protective factors, and the ideas of hardiness, wellness, and global health (White, 2014).

Factors Promoting Recovery: Key factors promoting recovery from AUD include strong social support, treatment engagement, personal motivation, healthy coping mechanisms, and a stable environment, as well as personal motivation and commitment to change.

Factors Hindering Recovery: Factors hindering recovery refer to the deficits, barriers, and challenges that hinder an individual's progress and success in recovery from substance use disorders and increase the risk of relapse. These obstacles may include factors such as poverty, homelessness, lack of social support, stigma, co-occurring mental

health issues, and limited access to healthcare services (Cloud & Granfield, 2008; Patton et al., 2022).

Self-efficacy: refers to an individual's belief in their capacity to execute behaviors necessary to achieve specific performance outcomes. Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment (Bandura, 1977, 1986).

Social Connectedness: Social Connectedness refers to establishing and maintaining meaningful relationships and a supportive network that contributes to an individual's journey toward sustained sobriety. These social bonds provide emotional support, reduce feelings of isolation, promote healthier lifestyle choices, and foster a sense of belonging, which are essential to experiencing better recovery outcomes, including a decreased likelihood of relapse (Tracy & Wallace, 2016).

CHAPTER TWO

LITERATURE REVIEW

Historically, relapse is often defined as a return to a previous substance use behavior following an episode of abstinence, despite the intention of an individual to remain abstinent (Moon & Lee, 2020). Despite the considerable improvement and expansion of Alcohol-related services over the past several decades (Tucker & Simpson, 2011; SAMHSA, 2016), relapse rates remain high.

Overview of Relapse Rates

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) states that, overall, about 90% of alcoholics return to alcohol use at least once after treatment over the course of four years (NIAAA, 2022). NIDA estimates general relapse rates for drug and alcohol use to be around 40-60% for individuals in recovery (NIDA, 2023). Utilizing data from the third wave of the NIAAA-funded 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-III) (Grant et al., 2015), Fan et al. (2017) examined the past-year prevalence of AUD recovery in the United States. They reported that of respondents with persistent AUD, defined by the severity of use and presence of DSM-5 AUD diagnostic criteria ($n = 7,785$), 16% of respondents achieved abstinence without symptoms, and 18% achieved low-risk drinking without symptoms. While these results are based on larger, national samples that cover an extended period of time, research focusing on relapse rates tends to be based on smaller, less representative samples, accounting for some variability of reported relapse rates (Tucker et al., 2020).

In a study examining relapse factors among a clinical sample receiving substance-specific treatment (n=81), Slidrecht et al. (2022) found that six and twelve-month relapse rates were 54% and 63%, respectively, with relapse being defined as ‘any alcohol use.’ Further research has reported similar rates, stating that 60% or more of those with AUD will relapse to drinking within six months following treatment (Nguyen et al., 2020; Durazzo & Meyerhoff, 2017; Maisto et al., 2006a). However, as outlined in the previous chapter, most individuals relapse within 90-100 days post-admission to clinical treatment (Kirshenbaum et al., 2009; Harvey et al., 2016). For example, Bourion-Bédès et al. (2020) reported that based on a study among a cohort of 175 outpatients, 50% or more of individuals in recovery relapse during the first 90 days of attending clinical treatment or follow-up care. In line with these findings, several studies have reported relapse rates of approximately 50% within the first 12 weeks after completion of intensive inpatient programs (Guentzel & McChargue, 2023). Kabisa et al. (2021) indicated that the relapse rates following clinical treatment reach 40–75% in the three-week to six-month period following treatment, demonstrating the need for a focus on recovery maintenance interventions during this timeframe.

Re-Admission and Continuation of Care

Concurrently, discontinuation of treatment and low treatment utilization are significant problems during the first three months of substance use care (Graff et al., 2009). Dropout rates prior to three months can amount to 50% or more (Palmer et al., 2009). Bourion-Bédès et al. (2020) reported a dropout rate of 30% over three months. Discontinuation of treatment during early recovery might lead to re-admission and

restarting the cycle of recovery. According to a study utilizing data from the Healthcare Cost and Utilization Project (HCUP) in 2011, re-admission rates for individuals with substance use disorders are relatively high (18-26%); re-admissions for alcohol-related issues accounted for 26 out of 100 re-admissions within 30 days after completion of or discharging from acute treatment (Hines et al., 2014). With the average treatment length of stay of intensive inpatient treatment (ASAM Levels 4 and 3) in the United States remaining at less than 30 days (see, e.g., Walker, 2009; Tucker et al., 2020), the evidence put forth in the HCUP data suggests that a considerable number of re-admissions occurs within approximately 60 days entering intensive inpatient treatment. The data concurs with findings previously reported, highlighting that the maximum risk of relapse occurs prior to reaching 70 days after entering Intensive Inpatient Treatment (Kirshenbaum et al., 2009). These figures emphasize the need for uninterrupted continuation of care and appropriate interventions following clinical treatment.

Outcome Measures and Continuing Care

Historically, studies evaluating treatment success relied heavily on drinking practices as the primary outcome metric, i.e., abstinence or reduced drinking, within specified timeframes, typically after 30 days, six months, or one year (Jalie et al., 2022). While relapse is associated with a return to drinking or increasing the amount of alcohol consumed after a previous reduction in drinking, research has put a stronger focus on outcomes that are not merely related to a change in drinking behavior. Later studies emphasize increases in social functioning, personal health, and well-being (e.g., Moos & Moos, 2006; Maisto et al., 2016; Maisto et al., 2018) as crucial to recovery and

potentially preventing relapse. This broader focus on recovery emphasizes addressing the needs of individuals early on in the recovery process. Researchers have examined various factors that may positively influence those outcomes. These include social support and engagement, coping skills, self-efficacy, a sense of well-being, Quality of Life, and motivation (see, e.g., Wheeler, 2020).

In summary, the majority of the literature agrees that the first 90-100 days of recovery constitute the most vulnerable timeframe for relapse. Still, there is limited research exploring the impact and salience of these factors and methods of service provision, such as PRSS, in early recovery during this short but crucial timeframe.

In this chapter, I will explain the role of Continuing Care in maintaining recovery beyond the high relapse period of 90-100 days post-acute treatment. I will also outline the role of Peer Recovery Support Services (PRSS) and associated groups as an emerging method of Continuing Care services. Finally, I will explore empirically supported factors promoting or hindering recovery that must be addressed in this early stage.

The Role of Continuing Care

Despite the improvements in AUD treatment care and broader availability, low service utilization rates have persisted (Jalie et al., 2020). Research has shown that longer retention in professional treatment is associated with positive treatment outcomes such as higher levels of abstinence, reduced crime and unemployment, and improved QoL (Malivert et al., 2012; Hubbard et al., 2005). Thus, treatment continuation and adherence is a critical factor to achieve successful treatment outcomes in the long term (National Institute of Drug Abuse [NIDA], 2012; Bukten et al., 2013; Costello et al., 2019; Daigre

et al., 2019; Marsden et al., 2019). There is strong evidence that the continuation of care substantially improves clinical outcomes (Kelly & Yeterian, 2013). Receiving outpatient treatment within seven days after hospital discharge is associated with reduced detoxification re-admission (Lee et al., 2006; Mark et al., 2013). Reif et al. (2014) reported that individuals receiving follow-up services within 14 days after hospital discharge reduced the risk of re-admission within 90 days post-discharge. Traditionally, ongoing support after an initial episode of residential treatment has been limited to time-bound Intensive Outpatient Programs (IOP) or Partial Hospitalization Programs (PHP). These programs addressed outcomes often overlooked during initial treatment and treated as secondary, long-term goals (MacLean et al., 2022; Laudet & White, 2008). As the understanding of recovery has shifted from a narrow focus on abstinence to a broader, multidimensional process encompassing improvements in physical, mental, and social well-being, there is a growing need to restructure and adapt ongoing care and recovery-related services provided after acute treatment (Kelly et al., 2020). This new perspective acknowledges the need for continuing and accessible holistic care that supports the individual in managing their condition in the long term (MacLean et al., 2022; Fox et al., 2005). Continuing Care services following Intensive Inpatient and Outpatient Treatment were often referred to as Aftercare, Stepdown Care, or Daycare. This study will use the term 'Continuing Care' as the overarching term to denote ongoing service provision to support an individual's recovery journey. Continuing Care is defined as a structured, long-term approach designed to support individuals in maintaining sobriety and improving their well-being and daily functioning following formal professional treatment

programs. It also includes practical support that helps clients connect to varied community resources and maintain or renew links with other community members. Specifically, individuals who are not likely to achieve or sustain recovery without support in their current socio-economic environment may benefit from Continuing Care services, whether they have participated in prior treatment or not (Tucker et al., 2020; Adamson et al., 2009; Paquette et al., 2022). As such, Continuing Care can complement clinical treatment on ASAM Level 1, i.e., Outpatient Treatment that consists of less than nine hours of services per week (ASAM, 2013). The goals of Continuing Care can be described as solidifying and sustaining the overall gains made in the initial phase of treatment, establishing abstinence if it was not already achieved, enhancing factors and conditions of Recovery, and preventing subsequent relapses that might lead to re-admission to further acute treatment (McKay, 2021).

Peer Recovery Support Services

Traditionally, there have been two ways of providing AUD treatment and recovery-oriented services. First, through professionally directed clinical services, including detoxification and stabilization in a hospital setting (ASAM Levels 4 and 3), as well as Intensive Inpatient or Outpatient Treatment, Counseling, or Medication-Assisted Treatment in Outpatient settings (ASAM Level 2), which primarily address the clinical and physical aspects of AUD treatment. Second, via mutual-help organizations, such as Alcoholics Anonymous, Narcotics Anonymous, and alternative 12-step programs led by untrained peers/volunteers who are often in recovery themselves (Humphreys, 2003; Kelly, 2017; Kelly et al., 2020). To respond to individuals' needs to achieve sustained

recovery, a third type of para-professional services has emerged to complement the two existing approaches by combining peer-led initiatives with professional activities. These so-called Peer Recovery Support Services (PRSS) are grounded in the principle that sustained recovery from AUD is not just a function of medical or psychological stabilization but also of providing and successfully mobilizing personal, social, environmental, and cultural resources (Kelly et al., 2021). These para-professional services have become an integral part of Continuing Care. They may enhance a community's ability to provide a more integrative spectrum of Continuing Care interventions beyond the confines of formal treatment settings (Ashford et al., 2019). Peer Recovery Support Services (PRSS) are defined as “the process of giving and receiving non-professional, non-clinical assistance from individuals with similar conditions or circumstances to achieve long-term recovery from psychiatric, alcohol, and/or other drug-related problems” (Tracy & Wallace, 2016, p. 143). Accessibility, shared experiences, motivation for behavior change, links to social services, and social, emotional, and practical support have been identified as the most significant benefits of PRSS (Jack et al., 2018).

In addition, PRSS help facilitate and support patients' involvement with Continuing Care, starting with the transition between levels of care or treatment settings to ensure continuation of care (Ashford et al., 2018; Eddie et al., 2019; SAMHSA, 2023; Timko et al., 2016). Identifying and connecting clients with adequate community-based recovery support services and mutual-help organizations is critical to helping individuals navigate the often complex and overwhelming system of services conducive to their

recovery path and overcome systemic barriers that might impede their progress in daily life (Eddie et al., 2019; SAMHSA, 2023; Reif et al., 2014; Jack et al., 2018).

Service Provision and Settings

The services PRSS provide might help fill gaps across diverse settings in the continuum of care. They provide peer support in primary healthcare settings, recovery homes/sober housing, addiction and mental health treatment agencies, or faith-based institutions. (White, 2009; Reif, 2014; Faces & Voices of Recovery, 2010; SAMHSA, 2023). Additional settings for PRW include Recovery Community Centers (RCCs) or Recovery Community Organizations (RCOs), which serve as community-based hubs for recovery-oriented services. They emphasize peer-led support groups, advocacy efforts, and community engagement to foster long-term recovery among participants (White & Kurtz, 2006). A study among RCC participants ($n=275$) reported significant improvements in abstinence, reduced substance-related harm, psychological well-being, and QoL during the first three months of participation. Recovery meetings, peer-facilitated meetings, and peer support were identified as the most used activities (Kelly et al., 2021). In addition, these community hubs may facilitate support with access to education, quality health care, or financial resources (Office of Disease Prevention and Health Promotion [ODPHP]; Ashford et al., 2021). The variety of settings and services aims to encourage the individual and make it appealing to stay actively involved. It appears to have promise to close the longstanding gap between the need and utilization of AUD-focused services (McKay, 2009; Tucker et al., 2020).

The Role of Peer Recovery Workers

PRSS are typically provided by Peer Recovery Workers (PRW) who are drawing on their personal experience with substance use–related problems, behavior change, and the process of recovery. In their unique role, they are positioned to provide assistance in ways not possible for conventional treatment providers and engage clients outside the confines of traditional clinical practice (Eddie et al., 2019). PRW are typically trained and, in many cases, certified individuals who provide broader support within a professional or community-based setting. They work with clients to set recovery goals, connect them with resources, and develop strategies to overcome barriers to sobriety without being limited to any single recovery philosophy (Reif et al., 2014; Eddie et al., 2019). First and foremost, they act as mentors, advocates, and role models. They provide emotional support by expressing empathy and care and assisting people in recovery by addressing negative emotions. They may help identify and develop personal strengths and skills, develop coping strategies, and increase motivation, self-esteem, confidence, and hope (Ashford et al., 2018; SAMHSA, 2023).

Criticism Regarding PRW

There is, however, criticism concerning the role of PRW, particularly concerning the variability in their training and the potential for inconsistent service quality. Further concerns include PRW’s ability to handle complex cases, especially those involving co-occurring mental health disorders (Reif et al., 2014). Furthermore, some researchers argue that relying on lived experience as the primary qualification for PRW may

overshadow the importance of evidence-based practices, potentially compromising the effectiveness of treatment (Bassuk et al., 2016).

These criticisms highlight the need for standardized training and supervision to ensure that PRW can effectively support individuals in alcohol recovery (Reif et al., 2014). There is still significant variability in training requirements across different states and organizations, leading to inconsistencies in the quality and effectiveness of peer recovery services (Bassuk et al., 2016). Despite these efforts, the lack of standardized national guidelines remains a challenge, highlighting the need for more uniform training, supervision, and certification processes to ensure that PRWs are well-prepared to support individuals in alcohol recovery (Eddie et al., 2019).

Evidence for the Benefits of PRSS

Available qualitative research supports the benefits of PRSS and provides deeper insights into the effect of PRSS on the individual recovery journey. In one descriptive study among 16 individuals, participants reported that they valued the shared experiences of the PRW, taking it more seriously than the advice they got from medical staff because it was “grounded in personal experience” (Jack et al., 2018, p. 309). Respondents believed that the relationships they had built with the PRW played a vital role in their recovery process. Even if they were unsure of the exact role of the peer, they felt more comfortable following a PRW’s advice (Jack et al., 2018). Although this study might not be representative due to the small sample size and the fact that it was conducted within a single hospital network and may not be representative, it provides an overview of the perceptions of PRSS. Overall, individuals in recovery often report feeling understood and

validated by PRWs. This shared understanding fosters a sense of belonging and social connectedness (Tracy & Wallace, 2016).

Research shows significant evidence for the positive impact of PRSS. Bassuk et al. (2016). Eddie et al. (2019) have analyzed several studies on Peer Recovery Support. They reported statistically significant findings across a variety of SUD treatment settings, indicating that participants receiving the respective peer intervention showed improvements in substance use and/or other recovery outcomes. Overall, Eddie et al. (2019) concluded that PRSS were “commonly associated with reduced substance use and SUD relapse rates, improved relationships with treatment providers and social supports, increased treatment retention, and greater satisfaction with treatment” (p. 3). However, the researchers cautioned that many null findings should be considered. They highlighted significant methodological limitations, including the inability to distinguish the effects of peer recovery support from those of other recovery support activities, along with varying definitions of the scope of work of PRW. For example, Bassuk et al. (2016) reviewed studies that reported decreased alcohol use, reduced re-hospitalization rates, and increased post-discharge adherence among the groups receiving peer support. Reif et al. (2014) evaluated the effectiveness of peer support services for individuals with SUD in another systematic review. They found that study results demonstrated improved relationships with providers and social supports, increased overall satisfaction with the treatment experience, reduced relapse rates, and increased treatment retention. Notably, these studies came to very similar results regarding the effect of PRSS. While this outlook is promising, little is known about the key mechanisms of PRSS or the

effectiveness of specific interventions (Bassuk et al., 2016; Reif et al., 2014). The broad range of interventions, settings, and levels of peer support makes it difficult to generalize results and identify interventions or modalities of care conducive to recovery for participants. However, with PRSS being increasingly integrated into addiction treatment programs, the evidence base for PRSS continues to grow, and awareness of their benefits expands; there is a hopeful trajectory toward further integration and expansion of these services within the continuum of care for AUD (Campbell et al., 2018).

PRSS and Mutual Aid

Mutual Aid groups play an essential role in the path to recovery and are often connected to Continuing Care, although they are not necessarily associated with formalized treatment. What is more, Alcoholics Anonymous (AA) and PRSS complement each other by addressing distinct yet interconnected aspects of recovery from AUD (SAMHSA, 2015). Mutual Aid groups, such as Alcoholics Anonymous (AA), are peer-led, self-help organizations where individuals in recovery come together to share their experiences and support one another through a structured program. They rely on their members' collective wisdom and shared experiences (Kelly et al., 2020b). There is ample evidence that supports the benefits of AA. For example, an extensive review (Cochrane, 2020) of 27 studies ($n=10,565$) stated that a combination of AA (peer-led) and 12-step facilitation (professionally led) was more effective at promoting continuous abstinence from alcohol than standard treatment approaches like cognitive behavior therapy (CBT). It was as effective at achieving several non-abstinence outcomes, such as reducing drinking intensity and alcohol-related harm (Kelly et al., 2020b). It is important

to remember that 12-step facilitation is a structured, professionally delivered therapeutic intervention that is part of Intensive Inpatient Treatment. It is designed to introduce individuals to 12-step principles and encourage active participation in groups like AA. On the other hand, AA is a peer-led, voluntary organization that individuals can access beyond Intensive Outpatient Therapy (Kelly et al., 2020b; NIAA, 1999).

AA and PRSS share several fundamental similarities. A key similarity is the focus on building sober social networks, which has been shown to improve abstinence and reduce relapse rates (Kelly et al., 2012). Both approaches also aim to foster empowerment and self-efficacy, with AA emphasizing a structured 12-step process and peer recovery support offering personalized strategies to bolster individuals' belief in their ability to maintain sobriety (White, 2009). Building connections as part of participation in Mutual Aid groups fosters mutual learning from shared experiences (Patton et al., 2022). While their structures and philosophies may differ, the communal aspect of these models creates a sense of belonging and emotional support, which is crucial for combating the isolation often experienced in addiction (Dingle et al., 2015).

While there are many similarities between PRSS and Mutual Aid/12-step groups, there are also distinct differences: At first glance, the roles of PRW and that of a sponsor in a 12-step program like AA significantly overlap. Both provide support to individuals recovering from AUD, but their roles differ considerably in their approach, training, and scope of responsibilities. An AA sponsor, a volunteer within the AA community, guides another member through the 12 Steps of the AA program, offering personal experience and support to help them integrate into the AA fellowship. The relationship is informal,

bi-directional, and based on shared experience. AA sponsors do not receive formal training for their role, and their support centers around the principles and practices of AA (Alcoholics Anonymous, 2001).

In contrast, PRW are trained para-professionals; their role is more structured and focuses on various recovery-related issues. Typically, PRW are accountable to an organization (e.g., community-based settings) they are affiliated with, and they are expected to adhere to specific standards and ethical guidelines (Eddie et al., 2019). PRW work with clients to set recovery goals, connect them with resources, and develop strategies to overcome barriers to sobriety without being limited to any single recovery philosophy (Reif et al., 2014; Eddie et al., 2019). Thus, they are opening up additional pathways to recovery, which is particularly important for those who disagree with the approach of AA (Sanger et al., 2019). Integrating AA participation with PRSS has enhanced abstinence rates, coping skills, and social connectivity. PRW, who are often members of the AA fellowship, can encourage individuals to engage in AA meetings, helping them navigate initial uncertainties and reinforcing the benefits of sustained participation (White, 2009). Furthermore, PRSS complement AA's group dynamics by fostering relationships that create a synergy between the structured group support that AA provides and the personalized recovery strategies of PRSS (Tracy & Wallace, 2016).

Factors and Conditions Associated With Enhanced Recovery Outcomes

Several factors have been empirically demonstrated to be important in fostering reductions in use and enhancing well-being or life satisfaction. They are often cited as important by persons in recovery (Laudet, 2008). The concept of Recovery Capital,

initially described by Granfield and Cloud (2001), has been pivotal in researching factors that positively and negatively affect recovery. It provided the foundation for examining key elements of recovery and the community resources required (Best & Laudet, 2010). Subsequent research has identified a multitude of factors as predictors of positive recovery outcomes, such as greater Self-efficacy, less avoidant coping style, motivation and readiness to change, as well as having a positive social network, support by peers, family, and friends, and a sense of community belonging (Moos & Moos, 2006; Charney et al., 2010; Wilson et al., 2016; Cooper et al., 2014; Witkiewitz et al., 2020). In this section, I will explore Motivation, Self-efficacy, and Social Connectedness as essential components of the recovery process. These factors are not only empirically supported but also associated with the benefits that PRW can bring to the recovery process.

Motivational Factors

Motivational factors are perceived as strong predictors of change in AUD treatment. They can contribute to treatment retention, continuation of care, and successful initiation of recovery, ultimately leading to sustained recovery. Therefore, motivational constructs such as readiness to change (including motivation for treatment) and commitment to change, as well as their impact on ongoing recovery throughout clinical treatment and beyond, are the subject of an increasing number of studies (see, e.g., Laudet & Stanick, 2010; Fiabane et al., 2017; Yang et al., 2018; Adamson et al., 2009).

Readiness to Change and Readiness to Take Action

Perceived benefits that fuel readiness to change include opportunities for a better life, reconnecting with family members and close friends, regaining trust, and avoiding

legal consequences (Dillon et al., 2020). Earlier studies have focused on assessing these motivational constructs at the beginning and end of clinical treatment to determine whether they predict various outcomes, such as changes in substance use and engagement or retention at the end of treatment (Laudet & Stanick, 2010). At this stage, during Intensive Inpatient treatment (ASAM Level 3), motivation for change is likely driven by and focused on the desire to minimize the problems caused by active use (Laudet & Stanick, 2010). Factors associated with greater motivation and readiness to change drinking behavior throughout the treatment period included recognition of mounting consequences related to drinking and having encountered worsening symptoms of use (hitting “rock bottom”), experiencing severe illness, the diminishing of pleasurable effects, and experiencing withdrawal symptoms (DiClemente et al., 2009; Bertholet et al., 2009; Small et al., 2012; Fiabane et al., 2017). At the same time, Gaume et al. (2017) measured readiness to change and change in drinking behavior in a sample of 78 participants in a professional alcohol outpatient program over the course of a year and found that higher scores of readiness to change, importance of change and confidence to change (i.e., self-efficacy) were associated with improved alcohol use outcomes overall; with the strongest effects being recorded for confidence to change.

However, readiness to change and the motivation to seek help do not equal readiness to take action and consequently change drinking behavior (DiClemente, 2003; DiClemente et al., 2001). Laudet and Stanick (2010) specifically explored commitment to abstinence as a construct at the end of clinical treatment. They found that a higher commitment to abstinence at the end of treatment predicts significantly greater odds of

continuously sustained abstinence for the entire first post-treatment year (Laudet et al., 2007; Laudet & Stanick, 2010). They identified perceived harm of future drug use as the strongest predictor of commitment to abstinence, stating that the prospective loss of positive recovery experiences might deter from drug use and, thus, reinforce motivation for continued abstinence. Subsequent research put a greater focus on motivational factors at the end of clinical treatment and in early recovery to predict long-term outcomes. Heather and Cambridge (2012) examined stages of change in a sample of individuals ($n=392$) who received a 12-week treatment intervention for AUD. They assessed participants at the pre-treatment stage (i.e., at the beginning of treatment), at the post-treatment stage after completion of the intervention at the 12-week time point, and again at twelve months after the start of treatment (nine months after the end of the intervention). Results showed that positive outcomes at 12 months were predicted by the post-treatment stage of change, rather than by the pre-treatment stage of change. Approximately one-third of those clients who remained in or progressed to the action stage during the intervention, making active efforts to change their drinking behavior at the time of the post-treatment assessment at three months, showed a successful outcome of either total abstinence or a non-problem (controlled) drinking score on the Alcohol Problems Questionnaire (APQ; Heather & Tebbutt, 1992) at the 12-month follow-up (Heather & Cambridge, 2012). A study by Ware et al. (2022), based on emergency room triage data for patients referred to SUD treatment and subsequently attending follow-up care ($n = 666$), concurs with these results, showing that being in the action state of change is a predictor of participation in Continuing Care. Providing guidance on mitigating

negative consequences may be essential in enhancing individuals' ability to leverage and continue building skills acquired during previous treatment.

Self-Efficacy

Bandura (1977) conceptualized performance self-efficacy as the belief that a person can successfully execute behaviors needed to produce a desired outcome. Bandura (2004) expressed that the core belief in one's efficacy to exercise control influences motivation and the basic processes of change. This belief is necessary to mobilize the effort required to sustain coping behavior and to successfully resist high-risk situations for drinking and drug use (Bandura, 1986). Self-efficacy was found to be a strong predictor of the occurrence of coping behavior, level of performance, and perseverance in the face of complex problems. At the same time, efficacy beliefs heavily mediated the relationship between earlier performance and subsequent performance, suggesting that efficacy beliefs enable a person in recovery to recall previous coping behaviors more easily (Bandura & Locke, 2003). Bandura (1977) proposed four dimensions of efficacy expectations that affect recovery progress: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Performance accomplishments involve activities in which an individual has overcome obstacles and achieved "personal mastery experiences" (Bandura, 1977, p. 195), increasing expectations of future success. Vicarious experiences are when an individual observes another person succeeding at a task without adverse consequences. They can boost confidence and expectations in observers that they might also succeed. Verbal persuasion, or encouragement from others, may increase an individual's confidence in their ability to achieve a goal. Emotional

arousal, on the other hand, has a negative impact on self-efficacy. Encountering high-stress situations can lead to fear and anxiety. In a state of heightened physical and emotional arousal, individuals are less likely to be confident in their ability to achieve positive outcomes. Furthermore, the level of self-efficacy is predictive of how persistent an individual will be at performing a task after failing (Chavarria et al., 2012). In the context of substance use, Chavarria et al. (2012) established the term Abstinence Self-Efficacy as the belief individuals have in their ability to abstain from engaging in an undesired action.

The literature consistently reports that self-efficacy significantly predicted alcohol consumption for more extended periods of time. In a meta-study that broadly explored possible predictors of treatment outcomes for AUD, Adamson et al. (2009), for example, found that dependence severity, abstinence self-efficacy, motivation, and having set treatment goals were the most consistent predictors of consumption-related outcomes overall, with self-efficacy emerging as the most frequently mentioned predictor variable. Ilgen, McKellar, and Tiet (2005) found that among alcohol and drug-dependent patients in residential treatment, a high level of abstinence self-efficacy at treatment discharge was the strongest predictor of one-year abstinence, suggesting the clinical importance of developing a high degree of abstinence self-efficacy. Moos and Moos (2006) found that greater self-efficacy, as well as less reliance on avoidance coping, predicted remission from drinking after as long as three years. In contrast, those with less self-efficacy were more likely to relapse. These findings were confirmed in later studies. For example, Müller et al. (2019) reported that self-efficacy at discharge predicted abstinence and was

associated with self-efficacy and motivation at one-year follow-up. It is essential to distinguish between motivation and self-efficacy. While motivation is related to an ‘I will’ mindset, self-efficacy is more closely associated with an ‘I can’ attitude (St. Quinton et al., 2023). Therefore, the two constructs are explored separately in this study.

Social Connectedness

Social Connectedness refers to the network of relationships and interactions that provide emotional, informational, and practical support to individuals in recovery from AUD and the resources available through these connections. These resources may help access specific information that other individuals within the social network can provide or facilitate (Hunter-Reel et al., 2009; Petterson et al., 2019). Supportive relationships contribute to a sense of well-being, life satisfaction, and emotional stability, which are essential for long-term recovery (Moos, 2007). The quality and quantity of an individual's sustained social connections with family, community, and social institutions, and the value that can be derived from them, determine the extent to which their relationships contribute positively to their recovery (Granfield & Cloud, 1999). Additionally, individuals with strong social networks are more likely to participate in treatment programs and adhere to recovery plans (Kelly et al., 2011; McCrady et al., 2009). At the same time, practical support is another critical aspect of Social Connectedness, which involves tangible assistance, such as transportation to treatment sessions, guidance on securing financial aid, or scheduling doctors’ appointments to help alleviate everyday life. Practical support from social networks facilitates access to treatment resources. It

reduces stress, thereby improving recovery outcomes (Laudet et al., 2006), underscoring the importance of a reliable social network throughout the recovery process.

Individual Effects of Social Connectedness

Every person's social connections and environment in recovery are as unique as their path to recovery. Existing qualitative and mixed-methods research provides deeper insights into specific factors conducive to recovery from an individual's perspective, such as the type of support the person received and found helpful. Participants in a study by Petterson et al. (2019a, 2019b), who had received SUD treatment ($n = 18$), stated that they found social relationships outside formal treatment equally helpful in their successful recovery. Participants indicated that recognition by a sibling, a significant other, a peer, or even a caring relationship with a service provider, who might form part of the individual's wider social network, was most helpful in initiating abstinence. Some participants mentioned that, in addition to receiving support, providing support to family members helped sustain their recovery and gave them a sense of purpose. A mixed-methods study conducted by Gilbert et al. (2023) revealed similar results. The study included an open-ended question asking participants ($n = 1,008$) what they found most helpful in sustaining their recovery. Staying connected ranked highest among responses, with statements about connections with family being mentioned as the most important (73%). Participants regularly referenced talking to, staying in touch with, or spending time with family, explicitly referring to a significant other or children. Support, care, and contact received from and given to friends emerged as other essential factors. Specifically, participants perceived connections with friends and peers in recovery as

beneficial. Participants noted that having a network of non-judgmental, supportive individuals who understood their struggles and encouraged their recovery was crucial in maintaining sobriety and improving overall well-being (Gilbert et al., 2023). Overall, participants reported positive relationships with peers or social networks that supported the individual's recovery goals and were conducive to recovery maintenance. Interacting with peers enabled them to connect to others without feeling shame or guilt and being cautious regarding whom to share substance use experiences, more so than the support of professional helpers. Additional mutual aid support, such as AA, might augment the impact of social support.

Mutual Aid and Social Connectedness

Support groups, such as AA or other 12-step groups, provide a unique form of Social Connectedness. These groups provide a platform for individuals to share their experiences, challenges, and successes with others who are facing similar struggles. Research indicates that participation in support groups significantly enhances recovery outcomes. Kelly et al. (2011) conducted a multiple mediator analysis ($n=1,726$). They highlighted that participation in support groups such as Alcoholics Anonymous (AA) facilitates changes in the social networks of its members by gaining more supportive relationships and simultaneously enhances abstinence self-efficacy when faced with environmental cues.

The support provided by social networks, combined with participation in a mutual aid group, seems to promote further positive recovery development. A one-year study by Kaskutas et al. (2001) among 654 participants that explored the impact of social networks

on alcohol recovery found that while AA involvement was a significant predictor of lower alcohol consumption and fewer related problems, positive and supportive relationships outside of AA were associated with higher rates of sustained sobriety at 30 and 90 days, mediating the effect of the support individuals gain from AA (Kasuktas et al., 2001). A literature review by Groh et al. (2007), analyzing 24 papers, highlighted that social support variables consistently mediated the impact of AA on abstinence, supporting the findings of Kasuktas et al. (2001).

This overview of Social Connectedness has shown that individuals in recovery can draw social support from multiple sources, such as peers, family and friends, and fellows in Mutual Aid Groups. Many studies have shown that Social Connectedness serves as a protective factor against relapse, emphasizing the need for continued care to stay connected with sources of positive reinforcement and mitigate risk factors.

Factors Hindering Recovery

The emphasis in recovery research has tended to focus on exploring strengths and assets as the prime means by which people recover, thereby decreasing the likelihood of relapse and promoting ongoing recovery (Best & Hennessy, 2022; Kelly & Hoepfner, 2015). At the same time, several factors are at work that may hinder the recovery process. As Granfield and Cloud (2008) revisited their concept of recovery capital, they coined the term ‘negative recovery capital,’ defined as “personal circumstances, individual attributes, behaviors, and values that impede one’s ability to successfully terminate substance misuse and create barriers for attaining sustained cessation” (p. 1983). However, the term negative recovery capital was met with significant criticism.

Researchers argued that framing factors hindering recovery as ‘negative capital’ obfuscates the original meaning of the term and the overall concept of utilizing resources that support building strengths and skills.

Further criticism includes the potential for overemphasizing deficits instead of enhancing the positive aspects (Best & Laudet, 2010), as well as the risk of pathologizing structural, systemic, and societal issues, such as social stigma, criminal justice involvement, or unemployment (Bourgois & Schonberg, 2009). Furthermore, research has shown that recovery does not necessarily proceed in a consistently positive and progressive manner, but rather that individuals experience it in both positive and negative ways. Consequently, assessing and measuring negative recovery capital as a universal concept presents significant challenges as it neglects the uniqueness of every individual’s path to recovery (Livingston et al., 2012; Best & Hennessy, 2017; Kaskutas et al., 2009; Cano et al., 2017). Several studies, therefore, focused on exploring specific factors that hinder advances along the path of recovery.

In a study based on qualitative interviews with 30 people in recovery, Patton et al. (2022) identified negative factors and forces that they term ‘pains of recovery,’ which act as barriers that impede a person’s capacity to overcome substance misuse problems, including uncovering unresolved trauma, low self-esteem, navigating a new identity and environment, family trauma and tensions, cutting off drug-using friendships, unemployment, loneliness and isolation, negative experiences with professionals (e.g., with staff in treatment centers) as well as stigma (Patton et al., 2022). Duffy and Baldwin (2011) conducted 45 semi-structured qualitative interviews in 11 drug rehabilitation

centers, describing difficulties in obtaining employment due to a lack of qualifications and experience, low self-esteem, and co-morbid mental health issues, among others, as factors hindering recovery.

Stigma and Self-Stigma

The stigma surrounding alcohol use was identified as a pervasive negative factor that might further complicate recovery, especially as AUD appears to be a particularly severely stigmatized mental health condition. Based on a review of 17 representative population studies that examined aspects of the stigma of alcoholism compared to other mental or medical conditions, Schomerus et al. (2011) found that individuals with AUD are less frequently regarded as mentally ill and held more responsible for their condition, experience more social rejection, and are at particular risk of being faced with structural barriers. Finding employment, for example, can be difficult due to stigmatization. Being unemployed or having to resort to lower-level employment roles to gain access to employment might lead to a difficult financial situation, lower self-esteem, or isolation due to perceived stigma by co-workers (Patton et al., 2022). At the same time, stress and anxiety associated with job loss or prolonged unemployment can lead to using alcohol as a coping mechanism, making it harder to achieve and maintain sobriety (Boden et al., 2019). Self-stigma can affect treatment utilization as well. Cozier et al. (2023) found that individuals who experience self-stigma may feel shame, fear judgment, and anticipate discrimination, which can hinder their willingness to seek help. Livingston et al. (2012) conducted a systematic review of 13 studies to examine the impact of stigma on individuals with SUDs. The analysis found that stigma, specifically self-stigma and

discrimination, were significant barriers to recovery by undermining an individual's motivation and ability to seek help, ultimately hindering their recovery efforts. They summarized that stigma contributes to several adverse outcomes, including poor mental and physical health, non-completion of substance use treatment, as well as delayed recovery and reintegration processes, which exacerbates social alienation (Livingston et al., 2012).

Systemic and Institutional Barriers

Due to cultural, institutional, or systemic barriers, recovery resources are not distributed equally across distinct groups of drug and alcohol-dependent persons. Restrictive managed care practices, public policies, and insurance coverage, for example, may limit access to treatment. Alienated ethnic minorities and underserved or underprivileged populations encounter more significant obstacles to recovery than individuals from more privileged circumstances. They may also face substantial stigma-related barriers, leading to social exclusion and ongoing social inequality to the detriment of recovery processes (Patton et al., 2020; Cloud & Granfield, 2001).

In summary, various conditions and factors, as well as their interactions, can either benefit or hinder a person's recovery. While participation in PRSS and seeing peers' successes might help decrease self-stigma, comprehensive research on how peer recovery support moderates the effect of factors like lack of self-efficacy, dysfunctional social and family systems, and, as a consequence, stigma associated with AUD and relapse in particular, is still scarce. There is also limited research on whether the

availability of Peer Recovery Support can offset the impact of systemic and institutional barriers by providing services that are otherwise unavailable to individuals.

Summary and Purpose of Study

This literature review provided a recap of relapse rates, associated readmission rates, and outcome measures commonly utilized. I introduced the role of Continuing Care and Peer Recovery Support Services (PRSS) as a method of service delivery. I explained the role of Peer Recovery Workers, who share their lived experience to provide advocacy and hope that can lead to behavior changes, including reduced alcohol use or abstinence. I outlined the positive impact of Mutual Aid, complementing PRSS support. Lastly, I reviewed empirically supported factors that enhance recovery to improve consumption and non-consumption-related outcomes, as well as factors that hinder recovery and may impact an individual's recovery journey, particularly during the first 90-100 days. Although the research has consistently shown that individuals engaged in peer support networks exhibit higher rates of sustained abstinence or reduction of alcohol consumption (Kelly et al., 2017), few studies focus on the effect of Peer Recovery Support in early recovery. There is still a gap in research regarding whether seamless Continuing Care after clinical treatment, specifically delivered through PRSS and PRW, affects relapse rates within the first three months after treatment. Similarly, research on factors salient to recovery maintenance during this timeframe is scarce. Given the ample evidence that most relapses occur during the first 90-100 days of recovery, there is an urgent need to explore how these factors might positively impact recovery maintenance during this crucial phase.

The current study will survey participants who have reached 90 days after achieving initial abstinence, either after completing Intensive Inpatient Treatment or deciding to pursue alternative methods, to help identify such factors. Specifically, this quantitative study has four primary objectives. First, it will assess the influence of PRSS on the dependent variable of alcohol use. Second, it will explore the relationship between PRSS and three potential mediator variables (Motivation, Self-Efficacy, and Social Connectedness). Third, it will examine the relationship between the three mediator variables (Motivation, Self-Efficacy, and Social Connectedness) and alcohol use. Fourth, it will test whether the proposed mediator variables explain the predicted relationship between PRSS and alcohol use.

Research Questions and Hypotheses

Based on the findings in this chapter, the following research questions and hypotheses have been developed to describe the influence of PRSS on maintaining abstinence after initial recovery was achieved.

Research Question 1: What is the relationship between participation in PRSS and the number of Alcohol Use episodes at 90 days post-treatment?

1a) Participation in PRSS activities is associated with a decreased number of Alcohol use episodes after 90 days.

Research Question 2: What is the relationship between PRSS and the mediator variables Motivation, Self-Efficacy, and Social Connectedness?

2a) Participation in PRSS activities will be associated with higher levels of Motivation as measured by the URICA

2b) Participation in PRSS activities will be associated with higher levels of Self-efficacy as measured by the BSCQ

2c) Participation in PRSS activities will be associated with higher levels of Social Connectedness as measured by the SCS-R.

Research Question 3: What is the relationship between the mediator variables and Alcohol Use episodes when controlling for PRSS at 90 days post-treatment?

3a) Motivation will mediate the relationship between PRSS and fewer Alcohol use episodes

3b) Self-efficacy will mediate the relationship between PRSS and fewer Alcohol use episodes

3c) Social Connectedness will mediate the relationship between PRSS and fewer alcohol use episodes

Research Question 4: Is the relationship between participation in PRSS and fewer Alcohol use episodes mediated by Motivation, Self-Efficacy, or Social Connectedness?

4a) Motivation, Self-Efficacy, and Social Connectedness will mediate the relationship between PRSS and fewer Alcohol use episodes.

CHAPTER THREE

METHODOLOGY

This chapter describes the methods for exploring the relationship between Peer Recovery Support Services (PRSS), early recovery from AUD, and three potential mediator variables promoting recovery: Motivation, Self-Efficacy, and Social Connectedness. The chapter outlines the research questions and hypotheses and discusses the research design, methodology, and data analysis plan.

Research Design

As this study seeks to explore the impact of protective factors (i.e., PRSS and proposed mediators) on maintaining abstinence during the first 90-180 days after discharge from Intensive Inpatient Care, a retrospective approach will be used. A combination of purposeful and snowball sampling procedures will be used to survey participants in recovery. A regression analysis based on the gathered data will be used to determine whether there is a statistically significant relationship between the presence or absence of PRSS and Alcohol use among the participants, without manipulating any variables (Creswell, 2018).

Participants and Sampling

Participants include adults aged 18 and older of any gender who have reached at least 90 days but have not surpassed the six-month mark (180 days) after initial abstinence from alcohol has been achieved. The inclusion of individuals who have achieved between 90 and 180 days post-initiation of alcohol abstinence is intended to

enhance the potential sample size and increase natural variability. This timeframe also ensures that participants will be able to reliably recall and report on experiences and factors examined during the initial 90 to 180 days of the recovery process. Beyond those requirements, participant criteria were designed to be inclusive, ensuring that the findings are representative of a diverse population. Thus, participants may or may not have participated in Intensive Inpatient treatment (ASAM Level 3) and/or may currently participate in Intensive Outpatient Care (ASAM Level 2), such as Intensive Outpatient Programs (IOPs), Transitional Housing/Sober Living, Outpatient Treatment (ASAM Level 1), or other Continuing Care modalities. Participants will be eligible for inclusion in the study regardless of whether they have maintained continuous sobriety. Eligibility is not contingent upon participation in PRSS, 12-step programs, or other mutual aid groups. Polysubstance use and dual diagnoses were not considered exclusion criteria, as they are common in this population.

Sampling Procedures

Purposive sampling was considered an optimal data-gathering approach, as the study specifically focuses on participants who have reached 90–180 days after achieving initial abstinence. Purposive sampling involves identifying and selecting individuals or groups who are particularly knowledgeable about or experienced with a phenomenon of interest (Creswell & Plano Clark, 2011). Therefore, it is most likely to yield appropriate and valuable information (Kelly, 2010).

Data will be gathered using survey methodology, allowing for the measurement of characteristics at a single point in time. This approach was chosen for its standardization

and efficiency in collecting data from a large group of participants (Trochim, 2006). Surveys can be administered through various channels, including online platforms or email, providing flexibility in reaching diverse populations (Jones et al., 2013). For this study, surveys were distributed to individuals with diagnosed or self-reported AUD via treatment clinics, facilities, social media platforms, online groups, and listservs for alcohol addiction support or Mutual Aid groups. Further, snowball sampling will enable participants to share the survey with others in their network.

The survey was created in Qualtrics and distributed via URL and QR Code. Informed consent was obtained after participants read through the overview. They were then instructed to select 'yes' or 'no' to indicate their consent, including a clause stating that the researcher was not responsible for relapse or other undesirable outcomes. Participants who selected no were guided to the end of the study. There are no incentives to participate, and no remuneration will be provided.

The survey was designed with skip and branching logic based on participant responses. If a participant reported not having used alcohol in the three months after discharge from Intensive Inpatient Treatment, they were not shown questions about Alcohol use. Similarly, if participants indicated that they did not participate in PRSS, branching logic directed them to the next relevant question, rather than questions about participation in PRSS. This approach ensured that no irrelevant data were collected, while also optimizing the time participants spent completing the survey.

Data Collection

Once IRB approval was obtained, data for this study were collected between June 6th, 2025, and July 30th, 2025. Participants were recruited via outreach to Inpatient and Outpatient treatment centers, Recovery Organizations and Centers, Peer Recovery Organizations, and non-profit recovery organizations in the greater Detroit, Michigan area. Organizations were contacted via phone, email, and Facebook message to secure interest in participation. Organizations interested in participating were provided with access to the survey and informed consent forms. Surveys were then passed on to Peer Recovery Specialists and other clinical staff within organizations, who distributed the survey among participants at their discretion, excluding groups they deemed too vulnerable. Flyers were provided to be posted in communal spaces, distributed among program participants, or posted on their respective Social Media channels. This approach also ensured the protection of privacy and anonymity, as well as preventing harm. To expand the outreach, the researcher approached Recovery and Sobriety-related Facebook groups to post the flyer after obtaining approval from group moderators.

Measures

The following instruments were selected to assess the impact of PRSS on recovery maintenance and the proposed mediator variables promoting recovery (Motivation, Self-efficacy, and Social Connectedness). The dependent variable in this study is defined by the level of alcohol use within the first 90–100 days after achieving initial abstinence, regardless of prior treatment history. It will be measured in two ways: First, the Timeline Followback method (TLFB) provides information on alcohol use and

relapse incidents. Second, depending on the outcomes of the TLFB (i.e., reports of one or more relapse incidents), additional questions will be asked to examine the specific relapse events and the participant's involvement in PRSS during the timeframe examined.

Questions assessing the overall utilization of PRSS will be posed. The mediator variables Motivation, Self-Efficacy, and Social Connectedness will be measured using the University of Rhode Island Change Assessment Scale (URICA), the Brief Situational Confidence Questionnaire (BSCQ), and the Social Connectedness Scale-Revised (SCS-R), respectively. Further, a brief demographic assessment will be administered.

Demographic Assessment

Demographic data were collected, including continuous variables such as age, as well as categorical variables such as gender, ethnic background, employment status, and relationship status.

Dependent Variable

Incidents of return to alcohol use (relapse) were measured by the Timeline Followback (TLFB) method (Sobell & Sobell, 1992).

Timeline Followback (TLFB)

The TLFB is a widely used retrospective assessment tool for measuring alcohol and substance use over a specific period. It employs a straightforward, calendar-based format to help participants recall their daily drinking or substance use patterns. It provides accurate estimates of consumption patterns, including frequency, quantity of alcohol consumed, and intensity of use over various time frames, making it suitable for evaluating treatment outcomes or tracking changes over time.

The TLFB has shown strong reliability and validity in clinical and research settings (Robinson et al., 2014; Sobell & Sobell, 1992). The validity of the assessment is reinforced by its convergence with other self-report measures, showing accuracy in capturing usage patterns (Sobell et al., 1996). Moreover, studies have indicated that the TLFB is effective across diverse populations and modes of administration, including face-to-face, telephone, and computer-based formats (Fals-Stewart et al., 2000).

The TLFB is scored by analyzing the collected data to summarize patterns of alcohol use over a specified period. Scoring metrics include Total Quantity, Frequency of Use, Intensity, Days of Abstinence, and Heavy Use Episodes. These metrics are calculated across the chosen timeline to assess patterns and trends that are of interest for the respective studies (Sobell & Sobell, 1992; Sobell et al., 1996). The TLFB offers some flexibility in terms of the timeframe assessed, which can range from 7 days to 24 months (Sobell & Sobell, 1992), as well as in terms of intervals for which data is collected. In a weekly TLFB assessment, for example, participants report their substance use for each week instead of each day. This approach is beneficial in studies where daily recall may be impractical (Searles et al., 2002).

For this study, the calendar used in the TLFB was modified to a weekly format instead of a daily one to evaluate the metrics of the number of Alcohol use incidents. Detailed daily documentation, including the specific amount of alcohol consumed, was not required, as the study focused exclusively on Alcohol use episodes. Participants retrospectively mark their calendars to indicate the weeks in which they consumed alcohol, allowing for an assessment of Alcohol use, determining whether an individual

consumed alcohol at all, and whether relapse was a single event or a recurring pattern within the critical 90-day timeframe.

Questions Exploring Relapse Events

If a participant reported one or more relapse events based on the TLFB, they were directed to a set of additional questions developed by the researcher to gain deeper insight into the respective relapse events. The questions posed referred to the duration of the respective Alcohol use episodes, and the service modality they returned to, which were defined as residential treatment, Intensive Outpatient Treatment (IOP), Sober Housing, Mutual Aid groups, or PRSS. Multiple mentions were possible to gain insights into treatment or Continuing Care modalities utilized or preferred.

Independent Variable

This study comprises one independent variable, defined as participation in Peer Recovery Support Services (PRSS) offered by Peer Support Workers (PRW) within a timeframe of 90 to 180 days for a period of three consecutive months (90 days) after achieving initial abstinence. PRSS interventions may include additional follow-up activities after clinical treatment or peer recovery support group sessions at a treatment facility, a Recovery Community Center, or other community settings. It can co-occur with outpatient treatment (individual therapy) and participation in Mutual Aid or 12-step groups.

Utilization of PRSS

To assess PRSS utilization, the researcher created a brief set of questions to gather detailed information on participants' engagement with PRSS. First, individuals were

asked whether they had participated in PRSS or not. If they confirmed participation, they were asked to mark the specific weeks they recall utilizing PRSS on a calendar. This information allows for the identification of service utilization patterns. The independent variable will be measured as the total number of PRSS encounters, providing a quantifiable assessment of service engagement.

Mediator Variables

The following instruments were selected to assess the impact of receiving PRSS on the factors promoting recovery (Motivation, Self-Efficacy, and Social Connectedness).

Motivation: The University of Rhode Island Change Assessment Scale (URICA)

Motivation was measured with the University of Rhode Island Change Assessment (URICA), a self-report questionnaire designed to evaluate an individual's readiness to change a specific problematic behavior (DiClemente & Hughes, 1990). It consists of 32 items that measure four stages of change: Precontemplation, Contemplation, Action, and Maintenance. Participants are asked to identify a specific issue in their lives and then respond according to their feelings about it. The URICA has been extensively utilized in psychotherapy and substance abuse treatment to customize interventions based on an individual's motivational stage (McConaughy et al., 1983). Responses to the questions are recorded using a five-point Likert scale, indicating levels of agreement with each statement (from 1 = Strongly Disagree to 5 = Strongly Agree). To calculate the URICA scores, the items from each subscale are summed, and range from 8-40.

A strength of the URICA is that composite scales can be combined to optimally assess motivational factors appropriate for a particular stage of recovery, which provides better insight into an individual's motivation than any discrete stage score alone. For this study, the composite scale known as Committed Action (CA; Pantalon et al., 2002) will be used to evaluate the balance between an individual's contemplation of change and their active engagement in behavior modification. The CA score ranges from -32 to +32 and is calculated by subtracting the Contemplation subscale score from the Action subscale score (Pantalon et al., 2002). For example, if the lowest possible Action subscale score (8) is subtracted from the highest possible Contemplation subscale score (40), the result is -32 (i.e., $8 - 40$). A CA score of -32 represents the lowest level of committed action, indicating strong ambivalence and no active steps toward change. Conversely, a CA score of +32 signifies the highest level of commitment to change (i.e., $40 - 8$), reflecting strong engagement in behavior change with little hesitation. Scores closer to zero suggest a transitional phase where contemplation and action are more balanced (Pantalon et al., 2002).

The original 32-item URICA has proven to be a reliable and valid tool for measuring readiness to change based on the Transtheoretical Model. Its high internal consistency (Cronbach's $\alpha > 0.80$) and strong test-retest reliability support its use across treatment settings (McConaughy et al., 1983). The test further demonstrates construct validity by effectively distinguishing between stages of change and criterion validity by predicting treatment outcomes (DiClemente & Hughes, 1990). Information about the reliability and validity of the CA composite score is limited. However, the

results showed that the CA score had predictive validity, as participants with high CA reported a significantly higher percentage of days abstinent. Additionally, it displayed improved concurrent validity compared to the four subscales of the URICA (Pantalon et al., 2002). Therefore, the CA score could provide a more accurate estimate of behavioral change, reflecting an individual's commitment to altering their problem behavior (Pantalon et al., 2002; Soler et al., 2008).

Self-Efficacy: The Brief Situational Confidence Questionnaire (BSCQ)

The Situational Confidence Questionnaire (SCQ), developed by Annis and Graham in 1988, is a self-report measure designed to assess an individual's confidence in resisting the urge to engage in specific behaviors, such as alcohol or drug use, in various high-risk situations. Its original form comprises 100 items (Marlatt & Gordon, 1985). A significantly shorter version, the Brief Situational Confidence Questionnaire (BSCQ), was developed to provide a concise yet effective assessment tool while maintaining strong psychometric properties (Breslin et al., 2000; Neal & Carey, 2005). The BSCQ includes eight items, each representing a specific category of high-risk drinking situations. The items on the BSCQ reflect the scenarios in the original SCQ, including (1) negative emotional states, (2) negative physical states, (3) positive emotional states, (4) testing personal control, (5) urges and temptations; (6) interpersonal conflict; (7) social pressure; and (8) positive emotional states. Respondents rate their confidence on a 0% to 100% scale in 10 percent increments, from 0% “Not At All Confident” to 100% “Totally Confident.” The results obtained from the BSCQ might inform targeted intervention

strategies based on the client's current confidence in maintaining abstinence (Breslin et al., 2000; Miller & Rollnick, 2012).

The SCQ and BSCQ are scored differently due to the significant difference in the number of items in each version. In contrast, the BSCQ simplifies this process by averaging the ratings for all eight items, resulting in a single composite score that represents an individual's general confidence in resisting alcohol use. In both versions, higher scores indicate greater self-efficacy, indicating a lower risk of relapse, whereas lower scores suggest reduced confidence in avoiding alcohol use. This streamlined approach makes the BSCQ a practical and efficient alternative for clinical and research applications.

In psychometric studies of the 8-item BSCQ, results revealed that the BSCQ subscales correlated with those of the SCQ, with coefficients ranging from 0.56 to 0.80, indicating criterion and concurrent validity (Breslin et al., 2000; Sklar et al., 2011). Additionally, both instruments exhibited similar, though not identical, factor structures, further supporting the validity of the BSCQ as a concise yet effective alternative to the SCQ.

Furthermore, the eight items on the BSCS demonstrate high reliability, with Cronbach's alpha exceeding 0.90, and good test-retest reliability, showing stability over time (Feldstein et al., 2011). Therefore, the BSCQ is an efficient alternative to the more extensive 100-item SCQ, effectively measuring confidence in resisting substance use across different situations and assessing relapse risk (Breslin et al., 2000; Sklar et al.,

2011), demonstrating its utility as a reliable tool for assessing Self-efficacy in relapse prevention research and clinical practice (Sklar et al., 2011).

Social Connectedness: The Social Connectedness Scale-Revised

The original Social Connectedness Scale (SCS), developed by Lee and Robbins (1995), is widely used to assess an individual's sense of belonging and connection with others in their social environment. The original scale consists of eight items assessing how individuals feel connected or disconnected from others. The Social Connectedness Scale-Revised (SCS-R) used in this study enhances the original version by increasing and refining items to improve clarity and psychometric properties, resulting in greater reliability and validity. It includes 20 items (10 positively worded and 10 negatively worded) that assess two core dimensions: connectedness and disconnectedness. Respondents rate their agreement with each item on a 6-point Likert scale, ranging from 1 (strongly agree) to 6 (strongly disagree), to evaluate their subjective feelings of interpersonal closeness and emotional connectedness. The negatively worded items are reverse-scored and summed together with the positively worded items, resulting in a scale score ranging from 20 to 120. An item mean score with a possible range from 1 to 6 can also be calculated by dividing the total scale score by 20 (or the number of scale items). Higher scores indicate greater social connectedness; lower scores reflect feelings of social isolation or detachment (disconnectedness) (Lee et al., 2001).

The SCS-R has demonstrated strong reliability and validity in measuring individuals' sense of social connectedness and belonging. Research has shown that the scale has high internal consistency, with Cronbach's alpha coefficients typically

exceeding 0.90, indicating strong reliability (Lee et al., 2001). The scale has demonstrated strong construct validity, correlating significantly with related constructs such as loneliness or self-esteem. It also exhibits good test-retest reliability, suggesting stability over time. Additionally, factor analysis has confirmed the two-dimensional structure of the scale, distinguishing between connectedness and disconnectedness (Lee & Robbins, 1995; Lee et al., 2001).

Data Analysis

A multiple mediation analysis explored how participation in PRSS relates to the number of Alcohol use episodes, with Motivation, Self-Efficacy, and Social Connectedness as mediators. Mediation testing examines three pathways: the effect of the independent variable on the mediators (a path), the influence of mediators on the dependent variable (b path), and the direct effect of PRSS on alcohol episodes (c path) (Baron & Kenny, 1986; Preacher & Hayes, 2008).

Conditions of Mediation

Mediation occurs when a predictor influences an outcome through one or more mediator variables. Three key conditions have to be met: the predictor significantly relates to the mediator (the a path), the mediator significantly predicts the outcome while controlling for the predictor to show that part of the predictor's effect works through the mediator (the b path), and the indirect effect ($a \times b$) is significant (Frazier et al., 2004). Frazier and colleagues emphasize the importance of the b path, because it indicates whether the mediator predicts the outcome after accounting for the predictor. Modern approaches reaffirm that a significant total effect (c path) is not required; mediation is

defined by the indirect effect rather than the significance of any single path (Hayes, 2018).

Analytic Approach

Since the mediator variables were measured on continuous scales and the dependent variable represented count data (i.e., number of Alcohol use episodes), a mixed-model mediation approach was suitable. The recommended approach uses linear regression (OLS) for the continuous mediators and a Generalized Linear Model (GLM) for count data (Hayes, 2022; Hilbe, 2011; Cox, West, & Aiken, 2009). Multiple regression within this framework enables the concurrent estimation of each mediator's unique effect on the outcome, while controlling for the influence of others (Cohen, Cohen, West, & Aiken, 2003). Regression coefficients indicate the change in the dependent variable for each one-unit increase in the mediator (Field, 2018; Tabachnick & Fidell, 2019).

Threats to Validity

Threats to External Validity

External validity is determined based on whether the research results are generalizable beyond this study (Wagner, 2013). Threats occur due to the characteristics of the population, the identified setting, and the timing of the experiment (Creswell, 2018). The study employs purposive sampling, recruiting participants from various groups, including treatment facilities, community settings, and 12-step programs, as well as through the snowball effect. Data is gathered through an online survey. While this is a convenient and efficient method for achieving a large sample size and extending research

beyond the local community, it is virtually impossible to validate that the sample is representative of the target population. This method may lead to significant sampling and volunteer bias, which can impact the study's outcome and pose a substantial threat to external validity.

Threats to Internal Validity

Internal validity is determined when the data provides correct inferences about the relationships between variables (Creswell, 2018). Wagner (2013) highlighted that internal validity describes the evidence of a causal relationship between variables in the result. The research highlighted that the instruments utilized to measure the predictor variables have good to excellent reliability and validity, as outlined above. The survey constructed by the researcher has not been tested for reliability and validity; thus, it may also compromise internal validity. The data collected was based on self-reported information and may introduce additional bias. The study also does not consider confounding variables such as dual diagnoses, poly-addictions, or other extraneous factors, such as participation in 12-step programs or other recovery-related activities or outpatient therapy. For example, individuals with mental health diagnoses may receive more treatment, which may affect the outcome (Charney, 2010).

Summary of Methodology

This chapter gave the reader details regarding the study's methodology and research design. This correlational study used a researcher-constructed questionnaire to collect data on respondents' alcohol use and participation in PRSS. The URICA, Brief Situational Confidence Scale, and revised Social Connectedness Scale-Revised were

utilized to measure the mediator variables of Motivation, Self-Efficacy, and Social Connectedness. Correlational and regression models, as well as mediator analysis, were employed to test the research hypotheses and investigate the relationship between PRSS and the primary outcome of maintaining sobriety during the 90 days following enrollment in clinical treatment, as well as whether mediator variables can be enhanced through PRSS.

CHAPTER FOUR

DATA ANALYSIS RESULTS

This chapter describes the results of the analyses and the methods used to explore the relationship between PRSS and early recovery from AUD in relation to the research questions and hypotheses. First, the procedures for data collection and cleaning will be explained. Then, statistical assumptions of the sample will be assessed, and an overview of the data analysis plan will be provided. Next, frequency and descriptive statistics will be presented to summarize the sample's demographic and study variables. Following these steps, the main analysis results will be shared.

Data Cleaning

Before conducting the primary analyses, the dataset was examined for accuracy, missing data, outliers, and adherence to statistical assumptions. All analyses were performed using IBM SPSS Statistics (Version 30) and the PROCESS macro (Version 4.0) (Hayes, 2018).

For participants who answered no to Alcohol use after discharge, questions about further details of Alcohol use episodes were coded as 0 for no Alcohol use. Similarly, if participants answered 'no' to participating in PRSS, questions about the utilization of PRSS were coded as 0. Participants were asked to specify the year, month, and day of their discharge date. However, for those who provided only the month but not the day, the 15th of that month was imputed as the discharge day. Alcohol use episodes and PRSS

participation were then calculated for the three months following discharge. Data outside this period were removed from the dataset uploaded to SPSS.

During the specified timeframe, out of a total of 171 participants, 162 agreed to participate in the survey, resulting in a response rate of 95%. Of these 162 responses, 33 further participants were excluded from the analytic sample as they did not meet the inclusion criteria (i.e., they had not participated in Intensive Inpatient Treatment at all). Of the remaining 129 cases, 20 cases were removed due to missing or incomplete data, including not providing a discharge date from Inpatient treatment, data entries about Alcohol use, and/or participation with PRSS not being aligned with the discharge date, or listing a discharge date that did not include three complete months after being discharged within the timeframe of the surveyed period. Of these 109 cases, one outlier was removed after applying appropriate procedures as described below. Thus, the final analytic sample consisted of 108 participants.

Descriptive Statistics

As shown in Table 1, the largest portion of the sample comprised individuals aged 25-35 years ($n = 37$, 34.3%). The proportion of individuals identifying as male or female was nearly equal (male: $n = 52$, 48.1%; female: $n = 51$, 47.2%), with the most represented ethnicities being Caucasian ($n = 44$, 40.7%) and Black/African American ($n = 38$, 35.2%).

Table 1*Other Characteristics of Participants (N = 108)*

Variable	N	%
Age		
18-24	24	22.2%
25-35	37	34.3%
36-45	24	22.2%
46-55	11	10.2%
56-66	6	5.6%
66+	6	5.6%
Gender		
Male	52	48.1%
Female	51	47.2%
Non-Binary	3	2.8%
Prefer not to say	2	1.9%
Ethnicity		
American Indian	2	1.9%
Asian or Asian American	8	7.4%
Black or African American	38	35.2%
Hispanic or LatinX	8	7.4%
Middle Eastern or North African	4	3.7%
White or Caucasian	44	40.7%
Prefer not to say	4	3.7%

Of the 108 individuals included in this study, 27 clients (25%) reported at least one episode of Alcohol Use; and 84 clients (74%) participated at least once in PRSS during the first three months after discharge from Intensive Inpatient treatment. Means and standard deviations are shown in Table 2.

Table 2*DV and IV Means and Standard Deviations*

Variable	N	M	SD	Median	Range	% Zero
Alcohol use episodes	108	0.54	1.04	0.00	0-4	75%
Participation in PRSS	108	3.38	3.02	3.00	0-12	22.2%

Descriptive statistics for the mediator variables are presented in Table 3. The sample's mean Motivation score, Committed Action, was 0.52 ($SD = 3.53$), indicating a neutral level of active behavioral engagement. The mean Self-efficacy score on the BSCQ was 60.75 ($SD = 22.55$), indicating a moderate level of confidence in resisting drinking across common high-risk situations, as mean scores typically range between 40 and 70 (Annis & Graham, 1988; Breslin et al., 2000). Participants reported a mean social connectedness score on the SCS-R of 73.7 ($SD = 10.35$), reflecting a moderate to moderately high level of sense of belonging and integration within their social networks (Draper et al., 2001).

Table 3

Mediator Variables Means and Standard Deviations

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	Maximum	Range
Motivation	108	0.52	3.53	-8	10	18
Self-efficacy	108	60.75	22.55	8.88	100	91.13
Social Connectedness	108	73.7	10.35	40	94	54

Note. Motivation = URICA Committed Action composite scale; Self-efficacy = Brief Situational Confidence Questionnaire (BSCQ); Social Connectedness = Social Connectedness Scale - Revised (SCS-R). The mediator variables were measured on different scales, so their means are not directly comparable. This does not affect interpretation, as all analyses used the original or standardized scores.

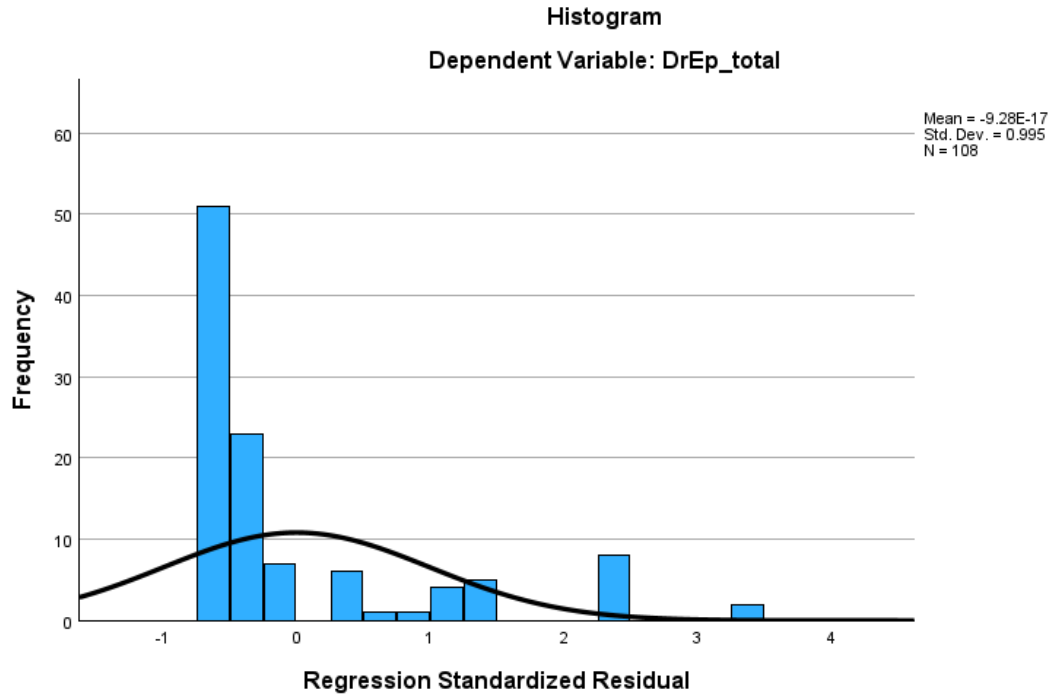
Assumptions Testing

Before performing the main analysis, assumptions were evaluated using a variety of methods. To assess the normality assumptions, a visual inspection of a histogram and a normal probability-probability plot (P-P plot) was used to identify significant deviations of the residuals. The histogram (see Figure 2) displayed notable positive skewness (1.77,

$SE = 0.23$) and leptokurtosis ($2.08, SE = 0.46$), indicating departures from normality.

Figure 2

Histogram of Sample Distribution

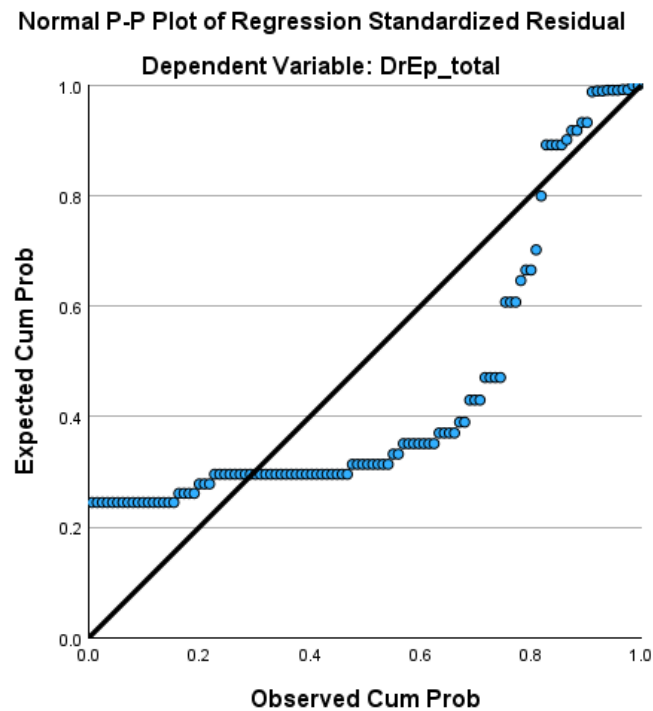


Similarly, the normal P–P plot of standardized residuals displayed an S-shaped pattern, indicating positive skewness and heavier tails, which reflects a substantial deviation from normality (Field, 2020; Tabachnick & Fidell, 2019), as shown in Figure 3. The Shapiro–Wilk test was significant, $W(108) = 0.68, p < .001$, further confirming non-normal residuals. The deviation from normality appears to result from the positively skewed and leptokurtic distribution of the count variables. The distribution of the residuals also indicated evidence of overdispersion, which is common in social and behavioral data characterized by many low or zero counts and relatively few high values

(Atkins & Gallop, 2007; Hilbe, 2011). The Durbin–Watson statistic of 2.09 indicated independence of the residuals, and all variance inflation factor (VIF) values were below 5, suggesting no multicollinearity (Field, 2020).

Figure 3

Normal P-P Plot of Residuals for Sample Distribution



Outlier and influence diagnostics were performed on all variables to evaluate how individual cases affected the regression model. Standardized and studentized residuals were assessed, identifying one case with residuals exceeding 3.0, signaling an extreme deviation from the model's predicted values. Additionally, Cook's distance for this case ($D = 0.14$) was more than three times higher than the average Cook's distance of the entire sample ($D = 0.01$), indicating a potentially influential observation (Field, 2018).

Although leverage values did not exceed recommended thresholds, this outlier significantly influenced the regression estimates and compromised the robustness of the results, leading to its removal from the final analysis. This approach aligns with guidelines for excluding cases that exert a substantial influence on model outcomes (Tabachnick & Fidell, 2019). The analyses were then repeated using the reduced dataset.

Regression Analysis Method

Because the mediation model involved both continuous and count variables, a mixed analytic strategy was required to model their distinct distributional characteristics properly (Hayes & Preacher, 2010; Hayes, 2022). Specifically, the a paths (predictor → mediator) were assessed with linear regression (OLS) because the mediator variables were measured on a continuous scale. The b, c, and c' paths (mediator and predictor → outcome) were estimated using generalized linear models, as the outcome variable was a count variable.

The mediator variables, measured on continuous scales, met the assumptions of linearity, homoscedasticity, and normally distributed residuals. Therefore, the respective paths were analyzed using OLS regression (Hayes & Preacher, 2010; Hayes, 2018, 2022). For the b, c, and c' paths, the dependent variable, Alcohol use episodes, represented count data. Because count outcomes are discrete, positively skewed, and heteroscedastic, they typically violate the assumptions of OLS regression, which require continuous, normally distributed residuals and constant variance (Hilbe, 2011; Long & Freese, 2014). Consequently, generalized linear models, such as the Poisson or negative binomial regression, are more appropriate for this type of data. The Poisson regression is the

conventional choice for count variables; however, it assumes equidispersion, meaning the mean and variance are approximately equal (Coxe, West, & Aiken, 2009).

In contrast, the negative binomial model is appropriate for analyzing count data, particularly when the data are overdispersed, i.e., when the variance of the dependent variable exceeds its mean (Hilbe, 2011). This model extends Poisson regression by introducing a dispersion parameter that accounts for the greater dispersion often present in social and behavioral data (Cameron & Trivedi, 2013). As a result, it provides more accurate standard errors and significance tests when overdispersion is present. Dispersion of this study sample was evaluated using the Pearson chi-square statistic, with a ratio of Pearson $\chi^2 = 1.97$ to its degrees of freedom exceeding 1.5, confirming the appropriateness of the negative binomial model with a Pearson $\chi^2 = 1.28$ to its degrees of freedom (Cameron & Trivedi, 2013; Long & Freese, 2014). This modeling strategy aligns with current recommendations for mixed-model mediation, where OLS is appropriate for continuous mediators and generalized linear models are appropriate for count outcomes (Valeri & VanderWeele, 2013).

Hypothesis Testing

Research Question 1: What is the relationship between participation in PRSS and the number of Alcohol Use episodes at 90 days post-treatment?

Research hypothesis (1a) stated that participation in PRSS activities would be associated with a decreased number of Alcohol use episodes after 90 days. To examine the effect of PRSS participation on alcohol use episodes, a negative binomial regression was conducted. Results showed that participation in PRSS significantly predicted a

decrease in Alcohol use episodes, $B = -0.139$, $SE = 0.7$, $p = .046$, with an incidence rate ratio ($\text{Exp}(B)$) of 0.87, 95% CI [0.76, 1.07]). Thus, hypothesis (1a) was supported.

Furthermore, this result indicates that each one-unit increase in PRSS participation was associated with a 9% decrease in the expected number of Alcohol use episodes.

Research Question 2: What is the relationship between PRSS and the mediator variables Motivation, Self-Efficacy, and Social Connectedness?

As these three mediator variables were continuous, linear regression (OLS) was appropriate for testing the direct effect of PRSS participation on the three associated research hypotheses (a path).

Research hypothesis (2a) stated that participation in PRSS activities would be associated with higher levels of Motivation as measured by the URICA. Results showed that PRSS participation did not significantly predict Motivation ($B = -0.61$, $SE = 0.11$, $t(107) = -0.54$, $p = 0.59$, CI 95% [-0.29, 0.16]). Therefore, hypothesis (2a) was not supported.

Research hypothesis (2b) stated that participation in PRSS activities will be associated with higher levels of Self-efficacy as measured by the BSCQ. Results showed that PRSS participation did not significantly predict Self-efficacy ($B = 1.16$, $SE = 0.72$, $t(107) = 1.62$, $p = .11$, CI 95% [-0.26, 2.58]). Therefore, hypothesis (2b) was not supported.

Research hypothesis (2c) stated that participation in PRSS activities will be associated with higher levels of Social Connectedness as measured by the SCS-R. Results showed that PRSS participation did not significantly predict Social Connectedness ($B =$

0.12, $SE = 0.33$, $t(106) = 0.37$, $p = 0.71$, 95% CI = [-0.54, 0.79]). Therefore, hypothesis (2c) was also not supported.

Research Question 3: What is the relationship between the mediator variables and Alcohol use episodes when controlling for PRSS at 90 days post-treatment?

To examine the relationships between the mediators and the dependent variable, controlling for the independent variable, a negative binomial regression analysis was conducted, given that the dependent variable represents count data.

Research hypothesis (3a) stated that greater levels of Motivation will be associated with fewer Alcohol use episodes when controlling for PRSS. Results for this relationship showed that a higher level of Motivation did not significantly predict a reduced number of Alcohol use episodes ($B = -0.69$, $SE = 0.47$, $p = .17$; $\text{Exp}(B)$, 0.94, 95% CI [0.85, 1.02]). Therefore, research hypothesis (3a) was not supported.

Research hypothesis (3b) stated that greater levels of Self-efficacy will be associated with fewer Alcohol use episodes when controlling for PRSS. Results for this relationship demonstrated that a higher level of Self-efficacy did not significantly predict a reduced number of Alcohol use episodes ($B = -0.01$, $SE = 0.08$, $p = .54$; $\text{Exp}(B)$, 0.99, 95% CI [0.98, 1.01]). Therefore, research hypothesis 3b was not supported.

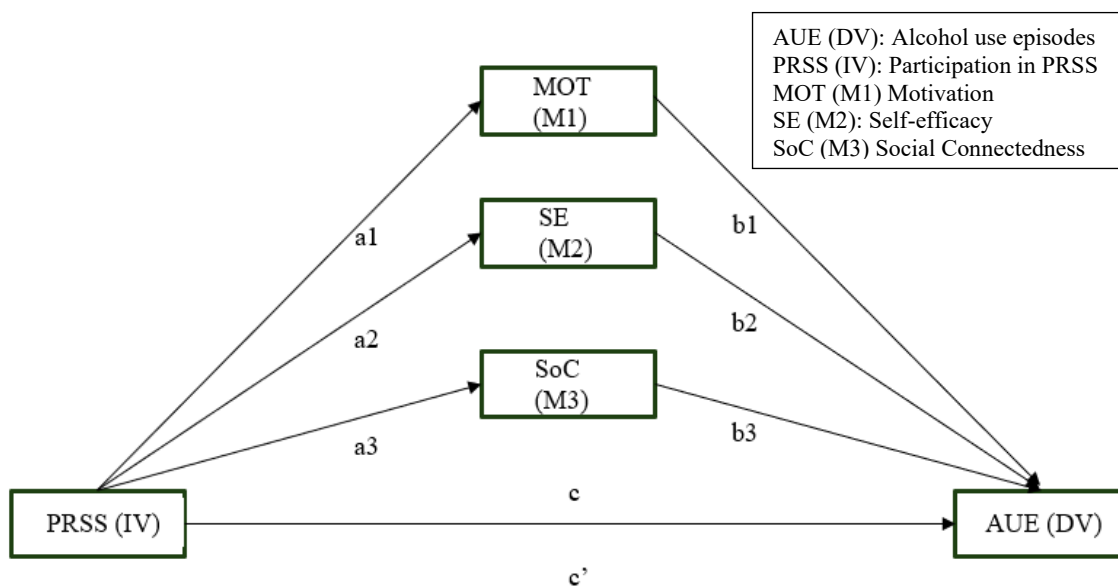
Research hypothesis (3c) stated that greater levels of Social Connectedness will be associated with fewer Alcohol use episodes when controlling for PRSS. Results indicated that a higher level of Social Connectedness did not significantly predict a reduced number of Alcohol use episodes ($B = -0.02$, $SE = 0.15$, $p = .28$; $\text{Exp}(B)$, 0.99, 95% CI [0.95, 1.1]). Therefore, hypothesis (3c) was not supported.

Research Question 4: Is the relationship between participation in PRSS and fewer Alcohol use episodes mediated by Motivation, Self-Efficacy, or Social Connectedness.

Research hypothesis (4a) stated that Motivation, Self-Efficacy, or Social Connectedness would mediate the relationship between PRSS and fewer Alcohol use episodes. Figure 4 illustrates the mediation model.

Figure 4

Overview of the Mediation Model



Although the c path showed that participation in PRSS significantly predicted Alcohol use episodes ($B = -0.139$, $SE = 0.2508$, $p = .046$), thus supporting a direct link that could be examined for potential mediation, neither the a path nor the b path demonstrated significant results. Therefore, the conditions for establishing mediation

were not met, and thus examination of the c' path is unwarranted, and the mediation hypothesis (4a) was not supported.

Summary of the Data Analysis

Chapter 4 detailed the study's findings, highlighting a statistically significant link between participation in PRSS and alcohol use episodes on the c path. However, Motivation, Self-efficacy, and Social Connectedness did not demonstrate a significant direct or indirect effect on the b paths. Chapter 5 will analyze the study, discuss the results, and explore the conclusions and their potential impact on treatment. It will also propose directions for future research.

CHAPTER FIVE

DISCUSSION

The primary goal of the study was to determine whether participation in PRSS predicted decreases in Alcohol use episodes among adults in early recovery from AUD, and to evaluate whether Motivation, Self-efficacy, and Social Connectedness mediated this relationship. This chapter discusses the findings of this study in relation to existing qualitative and quantitative research, explores possible explanations for the observed patterns, and considers both theoretical and practical implications. Finally, it outlines the study's limitations and offers recommendations for future research in this area.

Overview of Findings

A mixed-model regression approach was employed to explore the relationship between PRSS participation and drinking behavior, incorporating three mediator variables. Following the method outlined by Baron and Kenny (1986), this involved conducting multiple regression analyses to assess the significance of coefficients at each step.

It was hypothesized that 1) participation in PRSS is associated with fewer Alcohol use episodes in the first 90 days after discharge, 2) participation in PRSS activities will be associated with higher levels of Motivation, Self-efficacy, and Social Connectedness, 3) higher levels of Motivation, Self-Efficacy, and Social Connectedness will be linked to fewer Alcohol use episodes; and 4) Motivation, Self-Efficacy, and Social Connectedness will mediate the relationship between PRSS and the number of Alcohol use episodes.

The results on the c path showed a significant direct effect between PRSS participation and Alcohol use episodes, suggesting that an increase in PRSS encounters was connected to fewer Alcohol use episodes overall, and that engagement in peer-based support may play a protective role during early recovery. The regression coefficient for PRSS indicates that each one-unit increase in PRSS participation was associated with an estimated 9% decrease in the expected number of Alcohol use episodes. However, contrary to the hypothesized model, none of the proposed mediating variables significantly explained this relationship. Neither the paths (PRSS to each mediator) nor the b paths (from each mediator to drinking outcomes) were statistically significant. This outcome indicated that PRSS did not significantly predict changes in the mediating variables, nor did those mediators significantly predict drinking outcomes independently.

Interpretation of the Results

Despite the absence of significant indirect effects, the presence of a direct effect of PRSS on Alcohol use episodes indicates that PRSS exerts influences beyond the cognitive and relational mediators tested. Although mediation was not supported, Motivation, Self-efficacy, or Social Connectedness each demonstrated near-significant direct effects on drinking outcomes. With a larger sample size, these relationships might have reached statistical significance. This pattern suggests that, in addition to PRSS participation, having a strong commitment to action, confidence in maintaining sobriety, and a supportive social network may each serve as independent and complementary factors that promote recovery.

There may be additional unmeasured relational or contextual factors that are more influential in mediating outcomes, either enhancing or diminishing the relationships between PRSS participation and the proposed mediators. For instance, individuals involved in spiritual practices or 12-step programs may already experience higher motivation or have a more stable social network (Best & Laudet, 2010; Kelly et al., 2017). Conversely, individuals dealing with ongoing systemic obstacles, like stigma, unstable housing, unemployment, or limited social support, may experience fewer psychological advantages from peer interactions (Livingston et al., 2012; Patton et al., 2022). Additionally, contextual factors like the quality of a person's social network, lack of purpose or direction in early recovery, previous treatment experiences, or failed attempts to stop using alcohol could negatively influence outcomes like Motivation, Social Connectedness, and Self-efficacy (Best & Laudet, 2010; Ryan & Deci, 2000; Bandura, 1986).

Peer support interventions can impact recovery outcomes through various interconnected psychosocial and existential mechanisms. Hope and purpose, for example, are essential motivational resources that peers often help develop by demonstrating successful recovery and reinforcing belief in change (Best et al., 2016; Kelly et al., 2017). Peer interactions may also promote spiritual growth or reconnect individuals with the values that guide their recovery (Galanter et al., 2013; Zemore, 2007). Finally, the perceived helpfulness or quality of the relationship and personal connection within the peer relationship might act as a relational catalyst for change, enhancing engagement and modeling adaptive coping and recovery behaviors (Tracy & Wallace, 2016; Eddie et al.,

2019). In short, the unique interpersonal bond between PRW and the individual in recovery may play a more significant role from a cognitive and interpersonal perspective than solely influencing mediator variables, thus potentially fostering reductions in alcohol use and improving long-term recovery outcomes. Collectively, these contextual and experiential factors may have moderated or constrained the effects of PRSS on the proposed mediators, potentially obscuring indirect pathways to reduced alcohol use.

Integration Into Existing Research

In recent years, PRSS has gained increasing attention in alcohol recovery research, showing promising prospects. Research consistently indicates that individuals involved in peer support networks exhibit higher rates of sustained abstinence or reduced alcohol consumption (Kelly et al., 2017). Several studies have focused on demonstrating the overall effectiveness of peer-based interventions in promoting abstinence and engagement in recovery (Bassuk et al., 2016; Eddie et al., 2019; Tracy & Wallace, 2016). However, much of this research has been qualitative, emphasizing participants' personal experiences of hope, empowerment, and social belonging. Researchers found that individuals in recovery often report feeling understood and validated by PRW, stating that the relationships they built with the PRW played a key role in their recovery. Additional studies have demonstrated that maintaining social relationships and connections outside of formal treatment, particularly with friends, peers, and family, is crucial (Pettersson et al., 2019a, 2019b; Gilbert et al., 2023).

While these qualitative insights provide a valuable understanding of individual recovery experiences, there is limited quantitative research on the mechanisms through

which PRSS participation influences drinking behavior (Bassuk et al., 2016; Tracy & Wallace, 2016; Jack et al., 2018). Most existing studies focus on mediating factors such as Motivation (Laudet & Stanick, 2010; Heather & Cambridge, 2012), Self-efficacy (Müller et al., 2019; Chavarria et al., 2012), or Social Connectedness (Best et al., 2016; Kelly et al., 2011; McCrady et al., 2009), separately, rather than examining these variables collectively in a comprehensive mediation model. Furthermore, few studies investigate the effects of Peer Recovery Support during early recovery, despite evidence that relapse most often occurs within the first three months (Slidrecht et al., 2012). Therefore, the present study advances prior research by quantitatively testing multiple theoretically grounded mediators within a single framework, offering a more integrated view of the potential pathways through which PRSS may influence alcohol use outcomes.

Theoretical Implications

Bandura's Social Learning Theory (1977) offers a useful framework for assessing the quality of the relationship between a PRW and an individual in recovery. PRW model adaptive coping strategies and abstinent behavior, providing credible examples that foster learning and enhance confidence in recovery in an environment promoting social learning (Tracy & Wallace, 2016).

From a Social Cognitive perspective, the peer–client alliance functions within reciprocal determinism, a framework where personal beliefs, environmental influences, and behaviors continually impact each other (Bandura, 1986). Even if the measured cognitive and social mediators are not significant, the relational and environmental aspects of peer support may still foster recovery by strengthening self-regulatory

behaviors and adaptive beliefs (Litt et al., 2009). Therefore, although the statistical model did not confirm mediation, theoretical perspectives indicate that the quality of the peer relationship itself could be a key mechanism through which PRSS participation encourages sustained behavior change.

Practical Implications

From a practical perspective, the results of the study emphasize the importance of integrating PRSS as a key part of the care continuum for people recovering from AUD and extending their role early in recovery. PRSS involvement should be a central part of the transition from hospitalization and detoxification to Intensive Inpatient and Outpatient care (Timko et al., 2016). Including PRSS in discharge planning and follow-up can enhance continuity, sustain therapeutic gains, and offer emotional and practical support during this critical period (SAMHSA, 2017), leading to improved outcomes (Timko et al., 2016). Timko et al. (2016) found in their qualitative study that care coordination, including peer support during this transition, facilitates a more seamless movement of patients from hospital care at ASAM level 4 to level 3.

As a next step, PRSS could be more systematically integrated into Intensive Inpatient or Outpatient services. Treatment programs are increasingly embedding PRSS into their care models, recognizing its role in promoting recovery maintenance (Bassuk et al., 2016; Eddie et al., 2019). While participation in AA or other 12-step programs remains mandatory in many treatment facilities, PRSS has not yet achieved the same status. Currently, the integration of PRSS ranges from being a voluntary source of support to becoming a more formal component of care. Adding PRSS as a core

component of the daily programming in Intensive Inpatient or Outpatient treatment would allow participants to experience the benefits of PRSS in an environment that reinforces social learning. PRSS offers individualized guidance, accountability, and linkage to resources, while AA fosters ongoing social connection and shared identity within a recovery community. A combination of both components, PRSS and AA, might further enhance recovery outcomes (Eddie et al., 2020; Tracy & Wallace, 2016).

Similarly, a collaboration between PRSS and outpatient therapy might emerge as a vital mechanism for sustaining treatment gains and promoting long-term recovery. Coordinated communication between PRW, Inpatient, and Outpatient programs, as well as outpatient clinicians, enables alignment in treatment goals, shared monitoring of client progress, and mutual reinforcement of therapeutic interventions (Barton & Henderson, 2016; Recovery Research Institute, 2017). PRW can help clients apply clinical skills learned in therapy to their everyday life. At the same time, outpatient therapists can draw upon PRW's contextual insights regarding clients' engagement and challenges in daily life. Insights provided by PRW might also inform treatment modalities and approaches applied by the outpatient clinician. Such bidirectional collaboration could foster a more integrated, client-centered system of care. Furthermore, outpatient treatment planning could be refined if instruments like those applied in this study (URICA, BRSC, or the SCS-R), or other tests were applied that might reveal individual factors, including but not limited to Motivation, Self-efficacy, or Social Connectedness.

Overall, these findings suggest that intentional coordination among PRSS, outpatient therapy, and clinical teams helps ensure smoother transitions from structured

care and enhances outcomes by connecting professional and peer-based recovery support systems.

Limitations

Although this study contributes to the understanding of PRSS participation and recovery outcomes, it has several limitations that should be taken into consideration. The most notable limitation of this study is the relatively small sample size, which may have reduced statistical power and increased the likelihood of a Type II error, that is, failing to detect an effect that is truly present. With a smaller sample, random variability exerts a greater influence on the results, diminishing the ability to identify significant relationships, including indirect effects among the mediator variables. The presence of several near-significant findings across the mediators suggests that the analyses may have been underpowered. Consequently, the nonsignificant results should be interpreted with caution, as they may reflect limited statistical power rather than the true absence of an effect (Cohen, 1988; Kelly et al., 2024).

The cross-sectional and retrospective design limits causal inference and the ability to track changes in the proposed mediators and drinking outcomes over time. Additionally, the study relied on self-reported measures, which may be influenced by social desirability or recall bias, potentially compromising the accuracy of responses. Furthermore, data were gathered at a single time point between 90 and 180 days, which limited the capacity to evaluate change over time. Conducting the assessments at the start of the examined period, such as after discharge from Intensive Inpatient treatment, and

again after three months, could have offered more valuable insights into changes in behavior or attitudes.

The proportion of participants who engaged in PRSS and did not return to alcohol use was unexpectedly high in this sample. In fact, 75% of participants reported remaining sober within the examined timeframe, resulting in a restricted range for the outcome variable. Limited variability in the outcome can attenuate correlations and obscure true effects that may exist in the full population (Field, 2013). In this case, the narrow range of drinking episodes may have reduced the power to detect significant indirect effects, particularly within the mediation pathways. This outcome may be attributed to recruitment occurring within structured treatment and continuing care programs that already offered PRSS, potentially limiting the generalizability of findings to individuals who engage in recovery support outside of formal treatment settings.

It is challenging to determine the extent to which individual PRW were involved in each participant's recovery process or whether participants interacted with multiple PRWs who may have used different approaches, methods, or levels of involvement. Variation in PRW qualifications and training may complicate interpretation further, as some PRW may have received formal certification and supervision, while others may not have, potentially affecting the quality, consistency, and intensity of support provided.

Differences in the availability, accessibility, and structure of PRSS programs across treatment settings might also have influenced participation rates and, in turn, the overall generalizability of the findings. Finally, isolating the unique effects of peer recovery support from other ongoing recovery activities, such as outpatient therapy, 12-

step participation, or informal social support, remains difficult and may have contributed to unexplained differences in the observed outcomes.

Future Research

Although this study contributes to the understanding of the mechanisms linking PRSS and drinking outcomes, future research should continue to explore the complex pathways through which PRSS affects behavioral and psychological mediators and drinking outcomes in recovery populations. As a first step, the current study could be replicated with a larger sample to enhance statistical power and reduce the likelihood of Type II error, potentially conducted in various settings. Additionally, a larger and more diverse sample, including participants with a wider spectrum of drinking patterns, would increase variability and help mitigate the limitations imposed by the restricted range. Such a replication may offer clearer insights into the importance of the proposed mediator variables and their interactions within a multiple mediation model.

Future studies may also investigate different or additional mediators, such as hope, purpose, and coping skills, within the same mediation model framework to assess their potential effects, thereby providing a more comprehensive understanding of the processes contributing to drinking outcomes.

As this study focused on the impact of PRSS on Alcohol use, outpatient therapy or counseling was not examined as part of the model. There is limited research on the combined effect of PRSS and outpatient therapy or counseling in the early stages of recovery. Outpatient treatment may interact with PRSS participation to enhance Motivation, Self-efficacy, and Social Connectedness, potentially strengthening recovery

outcomes. Incorporating outpatient therapy or counseling, either as a mediator in a multiple mediation model or as a secondary independent variable alongside participation in PRSS, could clarify how formal treatment interacts with PRSS. Including this variable would enable researchers to examine the combined and unique effects of peer-based and professional interventions, providing a more nuanced understanding of the mechanisms that support long-term recovery and promote a broader approach to recovery maintenance. Findings from this research could inform integrated treatment approaches across settings, highlighting strategies to complement and enhance recovery maintenance.

Given the significant effect of PRSS participation on the number of Alcohol use episodes observed in this study, future research should examine the relationship quality with PRW as a potential mediator of this effect. Qualitative studies consistently report that the supportive relationships participants build with PRW are perceived as central to their progress and sustained engagement in recovery (Egmoe et al., 2024; Duvall et al., 2024). Assessing perceived helpfulness through factors such as trust, empathy, relatability, and alliance quality could clarify how the relational environment within PRSS contributes to behavior change. Such investigations would provide quantitative support for relational mechanisms that have primarily been described on an individual basis in qualitative research.

Furthermore, the results showed that each one-unit increase in PRSS participation was associated with a 9% reduction in the expected number of Alcohol use episodes. Building on this finding, research could explore strategies to enhance this effect. Quantitative studies, for instance, might examine whether engaging in PRSS immediately

after discharge from intensive outpatient treatment, or even starting participation beforehand, further reduces the frequency of Alcohol use episodes. Additionally, investigating whether a higher number of PRSS encounters, particularly during the critical early stages of recovery, leads to greater reductions in Alcohol use could provide valuable insights for enhancing program delivery and timing.

Future research should also investigate the effectiveness of PPSS across different racial and ethnic groups. Participants' cultural background influences recovery experiences, social support preferences, and peer relationships, potentially moderating the impact of PRSS on drinking outcomes. Exploring these differences could reveal specific barriers or facilitators to engagement, such as culturally specific coping strategies, stigma, or community norms, and help inform the development of tailored interventions. For instance, a recent mixed-methods study by Vose-O'Neal et al. (2025) investigated recovery needs and how racial disparities might influence recovery pathways for Black individuals in Detroit, Michigan. This study highlighted aspects of recovery pathways that are particularly relevant to Black and low-income communities. Results showed that participants often viewed the race, cultural background, and lived experiences of both peers in recovery and treatment providers as influential in their recovery journeys. Peer recovery coaches, in particular, were seen as having a strong positive effect. These findings suggest that shared experience and cultural resonance can be important protective factors for Black individuals early in recovery. Importantly, participants noted that even when social and professional support was available, characteristics like shared experiences were regarded as more important than others (Vose-O'Neal et al., 2025).

Quantitative research can expand on insights from qualitative studies by identifying mechanisms tailored to the needs of ethnic populations, thereby making interventions more relevant and providing evidence of how peer support influences recovery outcomes, specifically for Black individuals. Including diverse populations allows researchers to ensure PRSS programs are equitable and responsive to the needs of individuals from various cultural and ethnic backgrounds.

Conclusion

Although the hypothesized mediators did not significantly explain the relationship between participation in PRSS and alcohol use episodes, the overall pattern of results provides valuable insight into the complex relationship between PRSS participation and drinking outcomes. The findings indicate that PRSS participation is significantly associated with reductions in drinking episodes, highlighting the importance of peer-based interventions in recovery-oriented care. Specifically, the results indicate that each one-unit increase in PRSS participation was associated with a 9% decrease in the expected number of alcohol use episodes.

This study suggests that consistent engagement in PRSS, especially when it takes place during the early stages of the recovery process, starting after hospitalization, detoxification, or entering intensive inpatient treatment, might contribute to a further decrease in drinking episodes. Exploring the effects of the proposed mediators of Motivation, Self-efficacy, and Social Connectedness, as well as additional mediators and potential moderating factors within this framework, could inform the development of

integrated treatment models that align PRSS with outpatient therapy or other continuing care services to enhance recovery outcomes and support sustained behavioral change.

The study also highlights the importance of integrating PRSS with formal treatment programs and could help customize interventions to address the cultural and psychosocial needs of diverse recovery populations. Improving training for PRW to ensure consistent standards of service delivery, along with strengthening alliance, trust, empathy, and perceived helpfulness, may further enhance outcomes.

Overall, this study emphasizes the vital role of PRSS in supporting recovery while establishing a foundation for future research to identify and leverage mechanisms that boost the effectiveness of peer-supported recovery interventions.

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APPENDIX A

IRB Approval



Date: June 27, 2025

Study #: IRB-FY2025-366

Study Title: The Impact of Peer Recovery Support Services on People with Alcohol Use Disorder in Early Recovery

Submission Type: Modification

IRB Decision: Exempt

Research Team:

Nicole Urhahn-Schmitt

Todd Leibert

The IRB has reviewed the Modification submission related to the above referenced study and determined that the changes listed below do not affect the exemption status of the study. The Modification submission is Approved and the study remains Exempt per federal regulations.

The approved modifications are the following:

- Expanding the inclusion criteria to participate in the study from 3-6 months after discharge from Intensive Inpatient treatment to 3-12 months to broaden the potential participant pool to achieve the sample size targeted.
- Revise the recruitment materials, information sheet and, survey to reflect the above listed change.

This submission includes the following approved documents:

- Recruitment Advertisement Flyer (Revised)
- Recruitment Advertisement email (Revised)
- Date-Stamped Information Sheet (Revised) V 6/27/2025
- Screening Questionnaire (Revised)

The IRB approved (date-stamped) consent document(s) has been published under Attachments in the Submission Details page. Please make sure to use the most recent IRB approved version of the consent form in consenting participants.

You are approved to implement the aforementioned modifications. Please retain a copy of this notification for your records.

This letter can also be found in Cayuse under the [Letters](#) tab in the [Submission Details](#) page.

If you have any questions, please contact the IRB office.

Thank you.

The Oakland University IRB

APPENDIX B

The University of Rhode Island Change Assessment Scale (URICA)

University of Rhode Island Change Assessment Scale (URICA)

Name: _____ Date: _____

This 32-item questionnaire is to help us improve services. Each statement describes how a person might feel when starting therapy or approaching problems in their lives. Please indicate the extent to which you tend to agree or disagree with each statement. In each case, make your choice in terms of how you feel right now, not what you have felt in the past or would like to feel.

For all the statements that refer to your "problem," answer in terms of what you write in the "Problem" text field below. And "here" refers to the place of treatment or the program.

There are FIVE possible responses to each of the items in the questionnaire:

1 = Strongly disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree

Problem: _____					
Statement	1	2	3	4	5
1. As far as I'm concerned, I don't have any problems that need changing.	☐	☐	☐	☐	☐
2. I think I might be ready for some self-improvement.	☐	☐	☐	☐	☐
3. I am doing something about the problems that have been bothering me.	☐	☐	☐	☐	☐
4. It might be worthwhile to work on my problem.	☐	☐	☐	☐	☐
5. I'm not the problem one. It doesn't make much sense for me to be here.	☐	☐	☐	☐	☐
6. It worries me that I might slip back on a problem I have a I ready changed, so I am here to seek help.	☐	☐	☐	☐	☐
7. I am finally doing some work on my problem.	☐	☐	☐	☐	☐
8. I've been thinking that I might want to change something about myself.	☐	☐	☐	☐	☐
9. I have been successful in working on my problem, but - I'm not sure I can keep up the effort on my own.	☐	☐	☐	☐	☐
10. At times my problem is difficult, but I'm working on it.	☐	☐	☐	☐	☐
11. Being here is pretty much of a waste of time for me because the problem doesn't have to do with me.	☐	☐	☐	☐	☐
12. I'm hoping this place will help me to better understand myself.	☐	☐	☐	☐	☐

Statement	1	2	3	4	5
13. I guess I have faults, but there's nothing that I really need to change.	☐	☐	☐	☐	☐
14. I am really working hard to change.	☐	☐	☐	☐	☐
15. I have a problem, and I really think I should work on it.	☐	☐	☐	☐	☐
16. I'm not following through with what I have already changed as well as I had hoped, and I'm here to prevent a relapse of the problem.	☐	☐	☐	☐	☐
17. Even though I'm not always successful in changing, I am at least working on my problem.	☐	☐	☐	☐	☐
18. I thought once I had resolved the problem, I would be free of it, but sometimes I still find myself struggling with it.	☐	☐	☐	☐	☐
19. I wish I had more ideas on how to solve my problem.	☐	☐	☐	☐	☐
20. I have started working on my problems, but I would nlike help.	☐	☐	☐	☐	☐
21. Maybe this place will be able to help me.	☐	☐	☐	☐	☐
22. I may need a boost right now to help me maintain the changes I've already made.	☐	☐	☐	☐	☐
23. I may be part of the problem, but I don't really think I am.	☐	☐	☐	☐	☐
24. I hope that someone here will have some good advice for me.	☐	☐	☐	☐	☐
25. Anyone can talk about changing; I'm actually doing something about it.	☐	☐	☐	☐	☐
26. All this talk about psychology is boring.	☐	☐	☐	☐	☐
27. I'm here to prevent myself from having a relapse of my problem.	☐	☐	☐	☐	☐
28. It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.	☐	☐	☐	☐	☐
29. I have worries but so does the next guy. Why spend time thinking about them?	☐	☐	☐	☐	☐
30. I am actively working on my problem.	☐	☐	☐	☐	☐
31. I would rather cope with my faults than try to change them.	☐	☐	☐	☐	☐
32. After all I had done to try and change my problem, every now and again, it comes back to haunt me.	☐	☐	☐	☐	☐

Subscale/Stage	Items	Remarks		
Pre-contemplation	1, 5, 11, 13, 23, 26, 29, 31	Omit item #31 when scoring for readiness		
Contemplation	2, 4, 8, 12, 15, 19, 21, 24	Omit item #4 when scoring for readiness		
Action/Active Change	3, 7, 10, 14, 17, 20, 25, 30	Omit item #20 when scoring for readiness		
Maintenance	6, 9, 16, 18, 22, 27, 28, 32	Omit item #9 when scoring for readiness		
Subscale/Stage	Pre-contemplation (PC)	Contemplation (C)	Active Change/ Action (A)	Maintenance (M)
Score:				

Total score (to use for Profile scoring): _____ Readiness score: _____

APPENDIX C

Timeline Follow Back (TLFB)

Name/ID#: _____

Date: _____

TIMELINE FOLLOWBACK CALENDAR: 2025

1 Standard Drink is Equal to			
	One 12 oz can/bottle of beer		One 5 oz glass of regular (12%) wine
	1 ½ oz of hard liquor (e.g. rum, vodka, whiskey)		1 mixed or straight drink with 1 ½ oz hard liquor

Complete the Following					
Start Date (Day 1): _____			End Date (yesterday): _____		
MO	DY	YR	MO	DY	YR

2025	SUN	MON	TUES	WED	THURS	FRI	SAT
				1 New Year's Day	2	3	4
J	5	6	7	8	9	10	11
A	12	13	14	15	16	17	18
N	19	20 M. King Day	21	22	23	24	25
	26	27	28	29	30	31 Chinese New Yr	1
F	2	3	4	5	6	7	8
E	9	10	11	12	13	14 Valentine's Day	15
B	16	17 Pres. Day	18	19	20	21	22
	23	24	25	26	27	28	1
M	2	3	4	5	6	7	8
A	9	10	11	12	13	14	15
R	16	17 St. Patrick	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31	1	2	3	4	5

APPENDIX D

Timeline Follow Back (modified)

Q7 Please indicate the weeks in which you drank alcohol during the first three months after your discharge from Inpatient treatment (rehab) as well as you remember. Please select all that apply.

	1st - 7th (1)	8th- 14th (2)	15th - 22nd (3)	23rd - 31st (4)
June 2024 (1)	☐	☐	☐	☐
July 2024 (2)	☐	☐	☐	☐
August 2024 (3)	☐	☐	☐	☐
September 2024 (4)	☐	☐	☐	☐
October 2024 (5)	☐	☐	☐	☐
November 2024 (6)	☐	☐	☐	☐
December 2024 (7)	☐	☐	☐	☐
January 2025 (8)	☐	☐	☐	☐
February 2025 (9)	☐	☐	☐	☐
March 2025 (10)	☐	☐	☐	☐

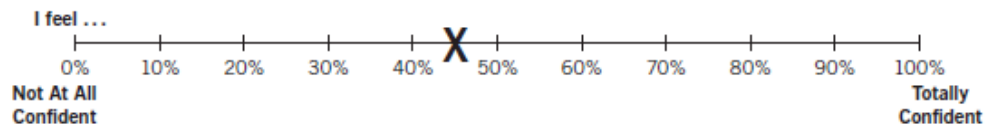
APPENDIX E

Brief Situational Confidence Questionnaire

Brief Situational Confidence Questionnaire (BSCQ)

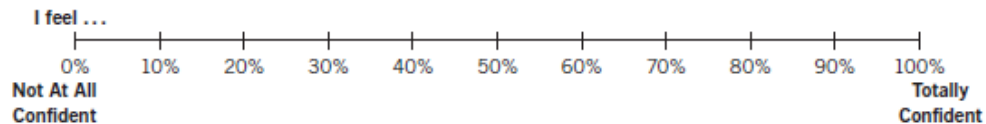
Listed below are eight types of situations in which some people experience an alcohol or drug problem. The questions are to be answered in relation to your alcohol or primary drug problem.

Imagine yourself as you are **right now** in each of the following types of situations. Indicate on the scale provided how confident you are **right now** that you would be able to resist drinking heavily or resist the urge to use your primary drug in each situation by placing an "X" along the line, from 0% "Not At All Confident" to 100% "Totally Confident," as in the example below.

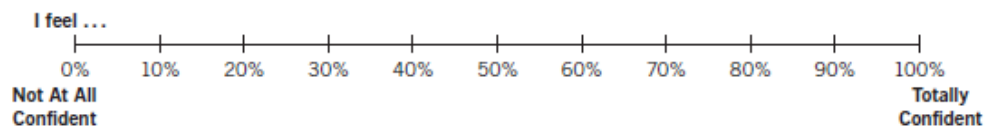


Right now I would be able to resist the urge to drink heavily or resist the urge to use my primary drug in situations involving ...

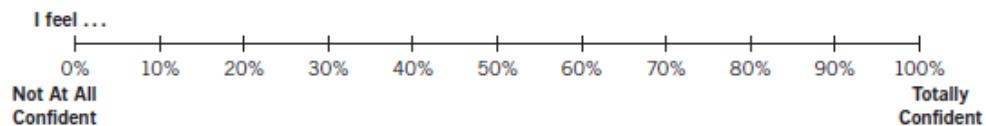
1. UNPLEASANT EMOTIONS (e.g., If I were depressed about things in general; If everything was going badly for me).



2. PHYSICAL DISCOMFORT (e.g., If I would have trouble sleeping; If I felt jumpy and physically tense).

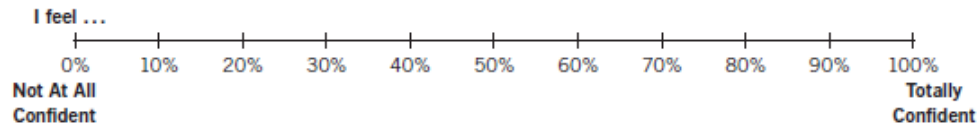


3. PLEASANT EMOTIONS (e.g., If something good would happen and I would feel like celebrating; if everything was going well).

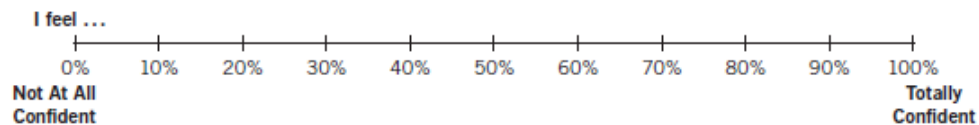


Right now I would be able to resist the urge to drink heavily or resist the urge to use my primary drug in situations involving ...

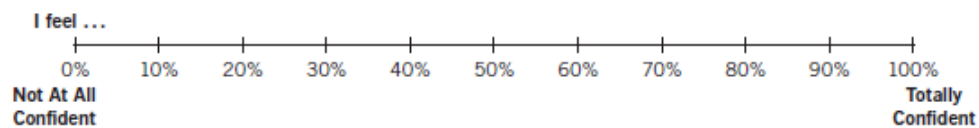
4. **TESTING CONTROL OVER MY USE OF ALCOHOL or DRUGS** (e.g., If I would start to believe that alcohol or drugs were no longer a problem for me; If I would feel confident that I could handle drugs or several drinks).



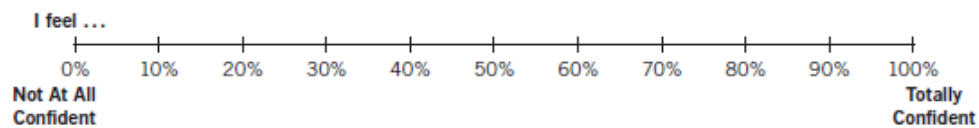
5. **URGES AND TEMPTATIONS** (e.g., If I suddenly had an urge to drink or use drugs; If I were in a situation where I had often used drugs or drank heavily; If I began to think of how good a rush or high had felt).



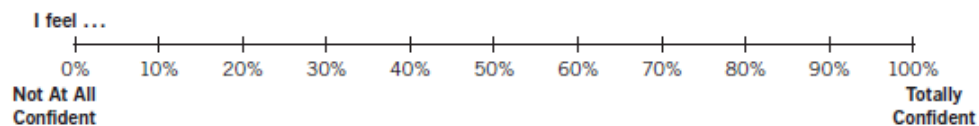
6. **CONFLICT WITH OTHERS** (e.g., If I had an argument with a friend; If I were not getting along well with others at work).



7. **SOCIAL PRESSURE TO USE** (e.g., If someone would pressure me to "be a good sport" and drink or use drugs with them; If I would be invited to someone's home and they would offer me a drink or drugs).



8. **PLEASANT TIMES WITH OTHERS** (e.g., If I wanted to celebrate with a friend; If I would be enjoying myself at a party and wanted to feel even better).



APPENDIX F

Social Connectedness Scale – Revised

Social Connectedness Scale – Revised

Directions: Following are a number of statements that reflect various ways in which we view ourselves. Rate the degree to which you agree or disagree with each statement using the following scale (1 = Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer. Do not spend too much time with any one statement and do not leave any unanswered.

	Strongly Disagree 1	Disagree 2	Mildly Disagree 3	Mildly Agree 4	Agree 5	Strongly Agree 6
					Strongly Disagree	Strongly Agree
1. I feel comfortable in the presence of strangers.....	1	2	3	4	5	6
2. I am in tune with the world.....	1	2	3	4	5	6
3. * Even among my friends, there is no sense of brother/sisterhood.....	1	2	3	4	5	6
4. I fit in well in new situations.....	1	2	3	4	5	6
5. I feel close to people.....	1	2	3	4	5	6
6. I feel disconnected from the world around me.....	1	2	3	4	5	6
7. Even around people I know, I don't feel that I really belong.	1	2	3	4	5	6
8. I see people as friendly and approachable.....	1	2	3	4	5	6
9. I feel like an outsider.....	1	2	3	4	5	6
10. I feel understood by the people I know.....	1	2	3	4	5	6
11. I feel distant from people.....	1	2	3	4	5	6
12. I am able to relate to my peers.....	1	2	3	4	5	6
13. I have little sense of togetherness with my peers.....	1	2	3	4	5	6
14. I find myself actively involved in people's lives.....	1	2	3	4	5	6
15. I catch myself losing a sense of connectedness with society.....	1	2	3	4	5	6
16. I am able to connect with other people.....	1	2	3	4	5	6
17. I see myself as a loner.....	1	2	3	4	5	6
18. I don't feel related to most people.....	1	2	3	4	5	6
19. My friends feel like family.....	1	2	3	4	5	6
20. I don't feel I participate with anyone or any group...	1	2	3	4	5	6

APPENDIX G

Informed Consent and Survey

Survey ‘The Impact of Peer Recovery Support Services on People with AUD in Early Recovery’

Hello! My name is Nicole Urhahn-Schmitt, I'm a Doctoral Candidate at Oakland University's Department of Counseling. Under the direction of Dr. Todd Leibert, an Associate Professor in the department, I'm working on my dissertation titled 'The Impact of Peer Recovery Support Services on People with Alcohol Use Disorder (AUD) in Early Recovery'.

Your decision to participate in this study is voluntary. You can choose to stop your participation at any time or skip any part of the study if you are not comfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, or the Department of Counseling.

What is the purpose of this study?

Despite participating in Inpatient treatment for AUD, many individuals experience relapse—most commonly within the first three months following discharge. The purpose of this study is to learn more about how various types of support and resources, as well as personal factors, may help individuals stay sober during the first three months after leaving inpatient treatment.

Who can participate in this study?

You are being invited to participate because:

- You are 18 years or older
- You have been discharged from Intensive Inpatient treatment in a rehab facility 3 to 12 months (90-365 days) ago

Your participation in the study does not depend on whether you stayed sober since your discharge.

What do I have to do?

Participation in this study will not require extra time beyond filling out the online survey at a time and place that you choose. The anticipated duration of this survey is approximately 15 minutes. You will be asked to complete the survey one time only.

The survey consists of questions regarding your personal recovery journey during the first three months after you left Inpatient treatment. It includes questions about your

personal recovery journey during the first three months after leaving inpatient treatment, e.g., which resources or support activities you have made use of. It will also explore personal factors that supported your abstinence or, if applicable, contributed to relapse. You will also be asked to complete a demographic questionnaire.

Are there any risks to me?

For this study, the potential risks are minimal. The potential risks that we know about are that you might be faced with recollections of your past actions that may cause discomfort. The survey is anonymous. No identifiable data that can be directly linked to you is collected.

Are there any benefits to me?

Although there may not be a direct benefit to you for participating, your insights may help researchers better understand what factors may support recovery during this early stage.

Will I receive anything for participating?

You will not receive any compensation for participating in this study.

What if I want to stop participating in this study?

If you want to stop participating, close your browser before completing and submitting the survey. If the survey is submitted, it will not be possible to withdraw your data from the study.

Who do I contact if I have questions about this study?

Please contact Nicole Urhahn-Schmitt at nurhahnschmitt@oakland.edu or (248)986-0769 with any questions.

By clicking the 'agree' button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and have completed Inpatient treatment 3-12 months ago.

☐ I agree to participate in this study and understand that I may stop my participation at any time during active participation. (1)

☐ No, I do not agree to participate in this study. (2)

Skip To: End of Survey If Hello! My name is Nicole Urhahn-Schmitt, I'm a Doctoral Candidate at Oakland University's Departm... = No, I do not agree to participate in this study.

Q1 First, please answer some demographic questions. How old are you?

- ☐ 18-24 (1)
- ☐ 25-35 (2)
- ☐ 36-45 (3)
- ☐ 46-55 (4)
- ☐ 56-65 (5)
- ☐ 66+ (6)
- ☐ Prefer not to say (7)

Q2 Which gender do you identify with?

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Transgender (4)
- ☐ Prefer not to say (5)

Q3 Which race/ethnicity best describes you?

- ☐ American Indian or Alaskan Native (1)
- ☐ Asian or Asian American (2)
- ☐ Black or African American (3)
- ☐ Hispanic or Latino (4)
- ☐ Middle Eastern or North African (5)
- ☐ Native Hawaiian or other Pacific Islander (6)
- ☐ White/Caucasian (7)
- ☐ Prefer not to say (8)

Q4 Have you been discharged from Inpatient treatment between three and twelve months ago?

- ☐ Yes (1)
- ☐ No (2)

Skip To: End of Survey If Have you been discharged from Inpatient treatment between three and twelve months ago? = No

Q5 What was the day of your discharge? Please answer as well as you can. If you can't remember, please skip to the next question.

	Month	Day	Year
Please Select: (1)	▼ January (1 ... November (11)	▼ 1 (1 ... 31 (31)	▼ 1900 (1 ... Answer 151 (151)

Q6 In the first three months since your discharge, did you drink alcohol?

- ☐ Yes (1)
- ☐ No (2)

Display this question: If in the first three months since discharge, did you drink alcohol?
 = Yes

Q7 Please indicate the weeks in which you drank alcohol during the first three months after your discharge from Inpatient treatment (rehab) as well as you remember. Please select all that apply.

	1st - 7th (1)	8th- 14th (2)	15th - 22nd (3)	23rd - 31st (4)
June 2024 (1)	☐	☐	☐	☐
July 2024 (2)	☐	☐	☐	☐
August 2024 (3)	☐	☐	☐	☐
September 2024 (4)	☐	☐	☐	☐
October 2024 (5)	☐	☐	☐	☐
November 2024 (6)	☐	☐	☐	☐
December 2024 (7)	☐	☐	☐	☐
January 2025 (8)	☐	☐	☐	☐
February 2025 (9)	☐	☐	☐	☐
March 2025 (10)	☐	☐	☐	☐

Q8 How long were the drinking episodes that you marked in the previous question?
Please select the duration for each relapse episode.

Display this question: If in the first three months since your discharge, did you drink alcohol? = Yes

	1-3 days (1)	4-7 days (2)	More than 7 days (3)	Prefer not to say (4)
First relapse episode (1)	☐	☐	☐	☐
Second relapse episode (2)	☐	☐	☐	☐
Third relapse episode (3)	☐	☐	☐	☐
Fourth relapse episode (4)	☐	☐	☐	☐
Fifth relapse episode (5)	☐	☐	☐	☐

Q9 After your drinking episode(s), did you return to any of the following services? Please select all that apply.

- ☐ Inpatient treatment (rehab) (1)
- ☐ Partial Hospitalization (Daycare) (2)
- ☐ Intensive Outpatient Programs (IOP) (3)
- ☐ Sober Living (Halfway Houses, Three-Quarter Houses) (4)
- ☐ Peer Recovery Support Services (5)
- ☐ Alcoholics Anonymous (6)
- ☐ Other 12-step programs (7)
- ☐ Other (8)
- ☐ Prefer not to say (9)

Q10 During the first three months after discharge, did you participate in Peer Recovery Support Services*? *Peer Recovery Support Services are forms of support offered by people who are in alcohol recovery themselves. These trained peers are not medical professionals, but they use their own experiences to support others in the process of their recovery.

☐ Yes (1)

☐ No (2)

Display this question: If During the first three months after discharge, did you participate in Peer Recovery Support Services? = Yes

Q11 Please indicate the weeks during the first three months after your discharge in which you participated in Peer Recovery Support Services. Please select all that apply.

	1st - 7th (1)	8th- 14th (2)	15th - 22nd (3)	23rd - 31st (4)
June 2024 (1)	☐	☐	☐	☐
July 2024 (2)	☐	☐	☐	☐
August 2024 (3)	☐	☐	☐	☐
September 2024 (4)	☐	☐	☐	☐
October 2024 (5)	☐	☐	☐	☐
November 2024 (6)	☐	☐	☐	☐
December 2024 (7)	☐	☐	☐	☐
January 2025 (8)	☐	☐	☐	☐
February 2025 (9)	☐	☐	☐	☐
March 2025 (10)	☐	☐	☐	☐

Display this question if: During the first three months after discharge, did you participate in Peer Recovery Support Services + Yes

Q12 On average, how frequently did you participate in Peer Recovery Support Services?

- ☐ More than once a week (1)
- ☐ Weekly (2)
- ☐ Every second week (3)
- ☐ Every third week (4)
- ☐ Monthly (5)

Q13 Which other activities and services have you participated in during the first three months after discharge? Please select all that apply.

- ☐ Partial Hospitalization Programs (PHP) (1)
- ☐ Intensive Outpatient Programs (IOP) (2)
- ☐ Sober Living/Halfway House/Three Quarter House (3)
- ☐ Alcoholics Anonymous (4)
- ☐ Other 12-step programs (e.g., Smart Recovery, LifeRing, etc.) (5)
- ☐ Other (please specify) (6)
- ☐ None (7)