Establishing Community to Extend Recovery Through Sober Fitness Fellowship

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Abstract

Background: Existing substance use disorder guidelines are deficient in reducing relapse rates, evidenced by the substantial number of persons experiencing relapse within months of recovery, with most relapsing within one year. Current interventions lack community reinforcement approaches to reduce relapse and risk factors required to combat the extensive damages related to substance use as costs exceed $1 trillion annually. Guided by the Social Cognitive Model, this quality improvement project aims to explore how group exercise combined with community reinforcement reduces relapse. It aims to boost recovery capital by improving quality of life scores. ***Methods***: A CrossFit instructor delivered personalized group exercise and wellness education in-person biweekly for six weeks. Adult residential treatment clients were eligible to participate recruited via a flyer upon treatment entry. A pre-intervention demographic questionnaire, a pre-/post World Health Organization Quality of Life Abbreviated scale (reliability $\alpha = > 0.70$) assessing intervention influence on the quality of life, and a post-intervention survey was administered. The lead investigator performed all data distribution and collection. Institutional Review Board approval safeguarded participants' rights and risks. ***Results:*** Pre/post improvements observed in all domains; psychological and environmental were statistically significant, while 100% of participants reported enhanced QoL, social support, & confidence related to long-term sobriety post-intervention. ***Discussion/Conclusion:*** Desired outcomes are increased quality of life scores to boost recovery capital. A sober community reinforcement approach combined with exercise may link to reducing relapse and total costs related to this growing public health crisis.

Keywords: substance use disorder, relapse, recovery, exercise, quality of life

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Substance use disorders (SUD) are chronic and progressive diseases resulting in the adversative physical, emotional, and financial welfare of persons who suffer. Substances modify the brain's ability to function, causing undesirable changes that persist and are often long-term, threatening a person's recovery (National Institute on Drug Abuse [NIDA], 2018). There is no cure for SUDs; therefore, management centers on the cessation of substances through varying treatments and interventions (Maclean & Saloner, 2018). Nevertheless, defying relapse to extend recovery required for long-term sobriety garners little attention while remaining one of the most significant challenges.

Problem Statement

SUD is characterized as a recurrent use of alcohol and/or drugs that cause clinically significant impairment, health problems, disabilities, and difficulties or failure to meet responsibilities at school, work, and home (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020a). Traditionally, substance use relapse is associated with consciously consuming alcohol or drugs. However, relapse frequently unfolds in three stages: (1) an emotional relapse that occurs before the conscious consumption of the substance, (2) awareness of conflicted feelings surrounding sobriety and cravings, and (3) the physical relapse resulting in the consumption of substance(s) (American Addiction Centers [AAC], 2020). The consequence of SUD and relapse is a substantial decline in quality of life, impacting persons across the lifespan (Giménez-Meseguer et al., 2020).

Despite decades of policy and clinical practice guideline direction, relapse rates have increased to greater than 85% within the first year of recovery—a significant rise compared to 40-60%, first reported in a landmark study in 2000 (Brandon et al., 2007; McLellan et al., 2000).

High relapse rates exist in other diseases of chronicity requiring lifetime management, such as hypertension (50-70%) and diabetes (30-50%), demanding restoration of symptom management and treatment adherence to regain remission (McLellan et al., 2000). If chronic disease treatment is equal, SUD relapse would merely signal to resume, amend, or begin novel treatment modalities (NIDA, 2020b).

According to the most recent data from the National Survey on Drug Use and Health (SAMHSA, 2020b), 19.3 million Americans age 12 and older experienced substance use disorder related to alcohol, illicit drugs, and prescription drug misuse in 2019. Peak incidence is middle to late adolescence through early adulthood. Drug abuse and prescription misuse are more prevalent among males than their female counterparts (National Center for Drug Abuse Statistics [NCDAS], 2019). Though, disease progression varies on exposure, initial use, and dependence.

Purpose and Rationale

SUD can devastate and overwhelm individuals and systems alike. United States (U.S.) healthcare costs related to SUD have skyrocketed beyond $1 trillion annually (Commission on Combating Synthetic Opioid Trafficking [CSOT], 2022). As these costs continue to rise it is paramount that the implementation of social, communal, and familial interventions by care teams promotes optimal long-term recovery efforts through adherence and accountability, as these obstacles remain common predictors for relapse (McLellan et al., 2000). This paper explores how group physical activity paired with sober community fellowship connections can influence adherence to current policy and guidelines to improve long-term recovery rates. Additionally, an emphasis on added social and community-based interventions could increase long-term recovery rates while decreasing injury and death rates among those with SUDs (Palis et al., 2020).

Background and Significance

A pivotal element to combating stigma and understanding the compulsivity of persons with SUDs, and their risk for injury and death, is understanding the physical nature of brain activity. Drugs and alcohol interfere with the brain's neurotransmitters that send, receive, and interpret information (NIDA, 2020b). Over time, the brain loses the synapse neuroplasticity, resulting in a flat affect that results in feeling depressed, unenthusiastic about life, and an inability to experience joy (NIDA, 2020b). There is the possibility of permanent pathophysiologic changes in the brain's reward center, but the engagement of the limbic system can lead to highly associative and conditioned behaviors (McLellan et al., 2000). For example, familiarity in persons, places, and emotional states manifests or triggers the risk of relapse by simply exposing persons to things associated with past drug use (McLellan et al., 2000).

Despite direct astronomical costs associated with substance use disorder (SUD), the prices of injury, morbidity, and financial and emotional destruction surrounding the hundreds of thousands of deaths each year are unacceptable (McLellan, 2017; Volkow, 2020). The United States' annual overdose death rates have surpassed 100,000 persons, while opioids are responsible for greater than 75% of the cases (Centers for Disease Control and Preventions [CDC], 2021a). Alcohol accounts for 261 deaths per day, or over 95,000 lives annually (CDC, 2021). Though these statistics are concerning, they reflect pre-pandemic figures that do not echo the alternate rise in our mental health and SUD crises experienced worldwide since that time. Current SUD management efforts need evaluation for efficacy derived from innovative and novel interventions (Pistone et al., 2020). Otherwise, health-related costs from injury, illness, relapse, and death will financially and emotionally devastate the U.S. population.

Persons in Recovery from SUD

Those recovering from SUDs are like the population majority, as addiction knows no demographical boundaries. Like other chronic disease processes, SUD has biological epigenetic risk factors (Bevilacqua & Goldman, 2009). Epigenetics is the environmental effects on the genetic expression of genes—it is also what makes addiction moderately to highly inheritable, accounting for a person's addiction risk factor to be 40 to 60 percent (Bevilacqua & Goldman, 2009). Ages 18-25 are the most prevalent group to report SUDs, accounting for one out of seven or 5.1 million persons (Center for Behavioral Health Statistics and Quality [CBHSQ], 2018). Adolescents and those 26-64 years old account for over 14.5 million of the total U.S. population, while more than one million persons $\geq$ 65 years old experience SUD (CBHSQ, 2018). In a 2017 survey, the three greatest ethnicities reporting SUD were American Indians/ Alaska Natives (12.8%), Caucasians (7.7%), and African Americans (6.8%) (CBHSQ, 2018). Outdated reports from 2013 reflect that at least 9% of the workforce struggles with SUD, while those numbers nearly double for the unemployed (CBHSQ, 2018). Finally, the Center for Behavioral Health Statistics and Quality (2018) reports the highest SUD occurring among current full-time employed persons and those with college degrees. Understanding commonalities among persons with and without SUD will help destigmatize the disease and evaluate treatment models.

Recovery has varying definitions; however, key elements exist—cessation of substance(s) and reduced symptoms resulting in positive changes within a person (Surgeon General, n.d.). In addition to overall health status, substance use and relapse can have lasting consequences impacting personal and legal circumstances and environmental surroundings. Alienation from former support systems and criminal behavior involvement often leads to barriers to seeking treatment or utilizing resources (Scott et al., 2018).

Group Exercise in Conjunction with Community Fellowship Connection

In a literature review exploring the effects of exercise on health, the results overwhelmingly demonstrate enhanced physical and emotional wellbeing, improved sense of general wellbeing, connectedness, and quality of life, increased adherence to self-management, reduced stress, and more significant association with recovery (Brown et al., 2014; Linke et al., 2019; McLellan et al., 2000; Pistone et al., 2020). Attending classes or groups that help cope with triggers, stressors, and cravings is necessary to maintain recovery and is critical for relapse prevention strategies (AAC, 2020). A 2014 meta-analysis reviewing the impact of exercise on SUD found that it eases symptoms of depression in alcohol and illicit drug users and improves recovery rates more so with illicit drug use (Wang et al., 2014).

Community connection and belonging increase compliance and adherence to exercise, aiding recovery (Lautner et al., 2020). A single-blind randomized controlled trial noted that incorporating social interaction decreased craving and relapse and showed a significant positive association with addictive behavior modifications and improved brain responses to substance-associated signals (Venniro et al., 2018). This study supports the need further to examine the community reinforcement approach (CRA). However, social media approaches could provide extended social support, especially in times of conflicted feelings surrounding sobriety and cravings—stage two of relapse, is essential (AAC, 2020; Venniro et al., 2018).

Current Recovery Management

Current recovery management emphasizes increased cognitive-behavioral and family therapies, relapse prevention classes attended individually or in a group, attendance of self-help meetings such as 12-step meetings, employing stress management adaptive behaviors, and treating co-occurring disorders, such as mental health conditions (AAC, 2020; Department of

Veterans Affairs & Department of Defense [VA & DoD], 2015). Due to the stigma SUD

possesses, many platforms are self-guided treatments, which poses a threat as studies widely find

that people with low self-efficacy are at increased risk for relapse (AAC, 2020; VA & DoD,

2015; McLellan, 2017; Scott et al., 2018). Healthcare platforms that manage other diseases such

as hypertension and diabetes enlist interprofessional team members, family, and friends to

effectively control diseases with nearly equal relapse rates (McLellan et al., 2000). Robust

evaluation to deploy similar mainstay treatment strategies and management is critical to

changing this public health dilemma. Despite having no treatment fits all model, medication-

assisted treatment can help manage relapse and recovery efforts (VA & DoD, 2015).

SUD Recovery Adherence

While there is an abundance of policies and guidelines to direct SUD, a comprehensive

approach to utilizing group exercise among persons in recovery to establish standard connections

known to extend recovery efforts needs further investigation. In 2010, SAMHSA, leading

members in the behavioral health field and persons in recovery from mental health and substance

use disorders, established the Recovery Support Strategic Initiative (SAMHSA, 2012). This

initiative helped SAMHSA develop The Four Dimensions of Recovery: Home, Health, Purpose,

and Community, including ten guiding principles (SAMHSA, 2012). The ten principles state that

recovery (1) develops from hope, (2) occurs from many pathways, (3) is person-driven, (4)

holistic, (5) based on respect, (6) requires support through personal relationships and social

networking that must include (7) with peers, allies, (8) family and community strengths and

responsibilities, while emphasizing the need for (9) cultural consideration and application, and

(10) addressing trauma (SAMHSA, 2012). Drawing on research, clinical practice, and

experiences of persons in recovery, SAMHSA (2012) believes the dimensions and principles are

essential to abstinence from substance use. Like other diseases of chronicity, SUD's long-term treatment must extend beyond symptom management. Healthcare stewards must advocate and help forge a pathway of reconnection to a life that yields pride and progress of goals by applying the dimensions and principles and stand to destigmatize SUD for any hope of eradicating SUD and other chronic diseases.

Internal Data

A Phoenix-area residential treatment center (RTC) specializing in SUDs with or without dual diagnosis was surveyed and found that a lack of communication and connection to and for alumni likely contributed to relapse. The stakeholders reported using SAMHSA (n.d.) national initiatives to guide clients' support as problems, issues, or gaps arose. Though the facility has no formal procedure to obtain data aggregation to examine current quality control measures, staff find relapse typically occurs 4-6 months after treatment ends. The most significant problem previously reported is the challenge of remaining connected and involved in their client's care/ needs after leaving the facility upon discharge or as an alumnus. This gap in resources and communication adversely affects the RTC clients, substance-dependent persons across the lifespan, their families, and systems from local, state, national, to global levels (Giménez-Meseguer et al., 2020). Valued outcomes of better health among substance-dependent persons require the use of current, evidence-based resources, the goodness of fit among the goal, the attainability of said goal, and a sustainability plan (Weberg & Davidson, 2021). Establishing hard data within the RTC is foundational to better understanding SUD persons' needs upon discharge and their long-term recovery.

Overall, shared data and themes emerged in the initial search, revealing a substantial focus on the role of exercise, group exercise, and peer support resulting in a sense of belonging

and connection. The McLellan et al. (2000) landmark study established a need for more

extensive research denoting that SUD is a chronic disease; however, societal and healthcare

stigmas have prevented the depth of research required to reverse SUD's global impact. However,

several studies in recent years are emerging to reduce SUD's stigma, eradicate the opioid

pandemic, and merge modalities that have proven effective previously (Volkow, 2020).

PICOT Question

This background led to the clinically relevant PICOT question: "In persons recovering

from substance use disorder (P), how does participation in an inpatient residential group physical

exercise and mindfulness program (I) compared to no group physical exercise or mindfulness

program (C) affect utilization of sober fitness community (O) three months post-discharge (T)."

Search Strategy

Article selection resulted from comprehensive literature searches from scholarly works

published in Cumulative Index of Nursing and Allied Health Literature (CINAHL), Google

Scholar, Journal Storage (JSTOR), PsychInfo, PubMed, and The Cochrane Library. Google

Scholar was excluded given that the number of search yields was too great. The final selection of

articles originated from CINAHL, PsychInfo, and PubMed as the number of results appropriate

to conduct further investigation, and items are high-quality evidence-based contributions.

Keyword Selection

The keywords *substance use disorder, substance use, substance abuse, addiction, drug

addiction, physical activity, physical exercise, exercise, fitness, sobriety, sobriety interventions,

community, and group impact* were initially combined and searched. Initial findings yielded

common themes of mood, anxiety, depression, cravings, confidence in recovery efforts, quality

of life, fellowship, peer-support enhanced recovery, and physical condition. Further search

actions led to an exhaustive Boolean connector and MESH term searches of *substance use disorders or substance use, group exercise, physical exercise, community, recovery,* and *relapse prevention*.

Initial and Final Search Yields

A preliminary search with previously mentioned initial keywords yielded greater than 22,100 results across all databases. Inclusion criteria were applied, resulting in an accumulation of 731 articles. The final submission of keywords produced 64 items in CINAHL, 43 in PsychInfo, and 88 in PubMed. A review of titles and abstracts relating to the clinically relevant PICOT question duplicated relevant publications across all databases. The further in-depth assessments led to 23 appropriate scholarly works. Additional exploration of landmark studies, grey literature, The Cochrane Clinical Trials, and a reference list of final articles was completed. A systematic review/ meta-analysis was discarded for similarity to another piece with a more extensive data set, resulting in 22 studies. Rapid critical appraisal (RCA) processes have been completed to establish a foundation of high-level qualitative and quantitative evidence (see Appendix A, Table A1 and A2).

Limitations, Inclusion, and Exclusion Criteria

This exhaustive literature review aims to produce shared, emergent findings regarding the role of sober fitness fellowship in maintaining long-term recovery. A lack of randomized controlled trials and other high-level evidence found in quantitative studies was deficient or fell outside the five-year limits for relevance. The limitations proved to be too small sample sizes, significant variation of instruments utilized and domains measured, and too little control for physical activity interventions. Most applications consisted of the adult population primarily in an outpatient setting, making inpatient or RTCs problematic to retrieve. Inclusions were persons

experiencing alcohol use disorder, substance use disorder, or a combination of the two. In conjunction with group physical activity published between 2016 and 2021 and academic quality peer-reviewed journals in the English language, any persons attempting to attain or maintain sobriety through mainstay treatment were included. Exclusion criteria included the following: publications lacking high-level scholarly research, reports of tobacco use disorder only, systematic reviews or meta-analyses that have more shared sources, interventions that do not include exercise and its role in SUDs or alcohol use disorders (AUDs), and articles resulting in inconclusive finds that do not validate recovery and enhanced quality of life measures. Ten high-quality studies were included in this body of evidence.

Critical Appraisal and Synthesis of Evidence

Synthesis of evidence resulted in high-level qualitative and quantitative evidence validated by applying a rapid critical appraisal (RCA) process and tools (Melnyk & Fineout-Overholt, 2019). Qualitative studies are lower-level due to increased risk for bias and are ungeneralizable among broad populations; however, they can capture individualized experiences unique to SUD, which is essential to developing a quality improvement project to aid in extending recovery. Qualitative evidence helped answer the clinical question of whether *group* exercise affects the utilization of sober fitness communities post-discharge that increase recovery capital. The evidence was paramount and found that group exercise and therapies enhanced social support and physical and mental health, reducing cravings while helping achieve or maintain sobriety. The quantitative data yielded overwhelming evidence that exercise and mindfulness activities and peer/ social support are principal markers in recovery capital. Several studies identified that recovery capital, the accumulation of personal and social resources that promote sobriety or substance recovery, was inherently increased among individuals when

surrounded by sober persons actively engaged in recovery efforts—increasing resilience to relapse (Jason et al., 2020). Finally, the evidence depicts outpatient services successfully deploying social support and exercise interventions, making it more likely to apply in RTCs where control and adherence can be better monitored and encouraged. A positive correlation to increased recovery capital in pre-and-post studies is identifiable; therefore, residential and other inpatient facilities should seek to implement these modalities (Brown et al., 2016; Linke et al., 2019).

Discussion

According to the Center for Behavioral Health Statistics and Quality (2018), Americans account for more than 50% of the world's SUD problem. It is critical to understand that SUD derives from many risk factors, including genetics and the environment. Despite stereotypical beliefs, SUD is not a socially constructed illness, and it does not discriminate. Exercise positively impacts many QoL areas and overall wellbeing but utilizing fellowship and encouragement to increase exercise adherence and compliance, which promotes recovery, is vital. Peer and social support are clearly outlined as markers to improve recovery capital and be prioritized through sober connection. Current treatment methods do not employ or mandate exercise. Given the current state of SUD's impact globally, a call to action for ground-breaking interventions must commence. A novel recovery model highlighting SAMHSA's (2012) dimensions and principles, combined with sober fitness fellowships, could be the missing link to this longstanding public health crisis.

Framework and Model Application

Theoretical Framework

Recovery or recovery capital is a process involving individual and circumstantial factors upheld by the community. Therefore, it is critical to understand specific markers that cultivate recovery capital or abstinence, such as quality of life (QoL), self-esteem, stress, hope, overall wellbeing, and more (Jason et al., 2020). These indicators influence and foster acquisitions that result from education, financial stability, improved physical and mental health and networking among sober-friendly communities. The conceptualization of recovery capital aligns with SAMHSA's Four Dimensions of Recovery: Home, Health, Purpose, and Community, including its ten guiding principles (SAMHSA, 2012). A positive correlation with recovery exists when recovery capital and the four dimensions are adhered to by persons who experience SUDs (Jason et al., 2020).

Sobriety is a summation of individual and communal efforts via resources; therefore, applying the Social Cognitive Model (SCM) is fitting (see Appendix B, Figure B1) (Chin & Mansori, 2018). The SCM outlines the relationship personal and environmental factors have on behavioral factors that influence outcome expectations. Individual elements lend to knowledge, goals, and self-efficacy, while self-efficacy originates from performance accomplishments, vicarious experiences, verbal persuasion, and psychological states (Chin & Mansori, 2018). The SCM highlights that environmental factors include social support aspects, though barriers or obstacles are essential to discern (Chin & Mansori, 2018). SCM aims to intervene in thoughts and actions in substance use disorders, resulting in sustained or long-term recovery efforts. This shift occurs as positive behavioral changes become cyclical as engagement to recovery capital elements and the four dimensions, strengthening efficacy through routine implementation.

Implementation Framework

The Plan-Do-Study-Act (PDSA) cycle is a commonly cited model for improvement used for action-oriented learning (see Appendix B, Figure B2) (Institute for Healthcare Improvement [IHI], n.d.). The PDSA model fits given its specific use to test a change in the actual setting to determine whether a change leads to an improvement or allows for the reimplementation of interventions after the need for change is determined (IHI, n.d.). This model is optimal because it is highly adaptable, allowing for individualized approaches required for recovery, given that standardized SUD treatment modalities are not curative or highly effective alone. This model is a new addition to Phase II. Many activities required reworking and modifications as the physical activities were too strenuous for participants just days into recovery. For a stepwise implementation table outlining each step of the chosen model, see Appendix B, Table B2.

Methods

Ethics

Arizona State University Institutional Review Board (IRB) expedited review application approval was granted on July 28, 2021, ensuring that Establishing Community to Extend Recovery Using Sober Fitness Fellowship is ethically sound, providing participants' rights and risks are protected. Participants' autonomy is honored via consent free of coercion or coaxing—maintaining confidentiality using numerical identifiers that are not personal to the participants. Equal distribution and access to resources, such as exercise equipment, enrollment materials, and in-person or prerecorded activity sessions, establish justice for all who partake. Implementing steps to promote long-term recovery is executed to do good for individuals and the group alike while assuring no harm occurs and respecting principles of beneficence and non-maleficence. Consent with the director of nursing, the licensed professional counselor, or some combination of the two representatives occurs at intake, in addition to medical clearance for physical activity.

Participants may terminate participation without reprisal of their treatment and care plan and are stated implicitly during the consent stages. Safety measures surrounding COVID-19 will meet facility policy, including rapid testing, social distancing, vaccination, mask use, and appropriately disinfect equipment.

Participants and Recruitment

Residential Treatment Center clients seeking long-term recovery wish to receive in-person group exercise and lifestyle activities as adjunct therapy. Inclusion and exclusion criteria ensure that the rights and risks of participants are ethically sound. Participants must be 18 years and older, diagnosed with addiction or a mental health disorder(s), speak English, read and write, and are enrolled at the RTC facility. Persons who cannot consent, do not have medical clearance for physical activity, or are imprisoned cannot partake.

Setting and Stakeholders

The residential community operates two facilities located in Scottsdale, Arizona. The RTC is an adult co-ed facility that provides treatment for SUDs or co-occurring psychiatric disorders and can service up to 10 individuals at each center. Commonly utilized treatments such as individual, group, and family therapies are available. Additionally, over twenty forms of personalized holistic treatment options exist to promote long-term sobriety. The overall goal is to provide small group therapy, evidence-based care, and specialty treatment programs for substance use and mental health disorders. The Chief Financial and Operations Officers offer final approval/ input and financial support. They are instrumental in helping pivot when changes in the PDSA cycle occur and enthusiastically contribute to sustainability efforts to extend recovery to clients. The clinical director advises clinical application(s) and is responsible for orienting clients and staff on the project events and schedule.

Intervention Segments

Part I begins with the first recruitment day. Enrollment is achieved by either the RTC staff or the project leader using a flyer for open enrollment to current clients or upon admission; then, consent forms are secured for participation. The participants are encouraged to complete the pre-intervention demographic questionnaire and the abbreviated World Health Organization Quality of Life (WHOQoL-BREF) instrument (World Health Organization [WHO], 2012). Participants receive a project guidebook, including education and resources related to nutrition, sleep, and exercise applicable in aftercare. It also includes workouts that can be self-implemented and a 21-day mindfulness journal.

Part II consists of twice-weekly sessions with a rolling admission for six weeks. Sessions include one physical exercise session held on Sundays and one physical exercise/lifestyle education session held on Wednesdays. In-person exercise sessions range from 45-60 minutes and include a warm-up, workout of the day, and cool-down stretching completed by a certified CrossFit (CF) instructor (project leader). Educational sessions vary from 15-30 minutes, completed by a CF instructor in person. Education includes topics from the project guidebook on the benefits of a healthy diet, sleep, and exercise.

Upon conclusion of client participation/enrollment or the 6-week implementation, phases III and IV occur. In Part III, participants completed the post-intervention WHOQoL-BREF instrument for comparison and a survey to identify needs assessment. Part IV consists of data aggregation, compilation, and calculation using the Friedman test with a p-value of < 0.05 to determine statistical significance. SPSS Data Analysis using Intellectus Statistics, a cloud-based statistical analysis software was completed.

Data Collection and Outcomes Measurement

Outcomes included the enrollment, participation, and attendance of group exercise and education activities. The program goal was to gain 50% participation rates per resident to support reduced cravings by promoting the recommended 150 minutes per week of exercise (WHO, 2020). The project leader collected participation and attendance rates on a sign-in sheet using unique resident identifiers at each session. Questionnaires measured all other outcomes to establish change in knowledge and long-term adoption of healthy behaviors concerning the role of diet, exercise, hydration, mindfulness, and sleep on recovery capital. Increasing community and support among fellow persons in recovery may boost recovery capital.

The Social Cognitive Model provided a framework for behavioral, environmental, and personal influences in several ways. First, the increased social support and environmental factor of a sober community reduce physical and emotional barriers. Second, improved performance and physiological states enhanced self-efficacy, thereby enhancing recovery capital (Chin & Mansori, 2018; Jason et al., 2020). Third, a change in knowledge through wellness education boosted personal and cognitive factors that will likely result in expected outcomes—extended recovery.

Participants completed the pre-and post-intervention evaluation using the abbreviated 26 item tool, WHOQoL-BREF. This instrument helped to assess QoL through specific domain profiles such as physical health, psychological, social relationships, and environment (WHO, 2012). The instrument helps evaluate an individual's perception of life related to goals, hopes, values, and apprehensions (WHO, 2012). Its uses extend beyond research to policymaking, and efficacy evaluation of different treatment modalities, including the appraisal of QoL across cultures, comparing subgroups within a culture, and quantifying change across time in response to changes in life circumstances.

The WHOQoL-BREF proves reliable and sound in statistical analysis of domains in assessing overall QoL. Reliability of $\alpha = > 0.70$ exists between all twenty-six domains and thirty languages, whereas validation was determined by an expert panel where items selected signify domain concepts resulting in quality characteristics (WHO, 2012). The instrument focuses on environmental, physical, psychological, and social domains that are symbiotic with the SAMHSA Four Dimensions of Recovery and the Social Cognitive Model made it a good fit for the project (SAMHSA, 2012; Chin & Mansori, 2018). Administration of a pre-intervention demographic questionnaire is encouraged and consists of gender, date of birth, education, marital status, and the number of treatment entrants. A final satisfaction survey comprised of eight questions will aid in future program modifications recommended by participants to optimize outcomes using the PDSA cycle. In conclusion, conducting a needs assessment survey to extricate the desire or need for alumni resources upon discharge is anticipated (Berkowitz et al., n.d.).

Confidentiality and privacy protection exist as residents are assigned a single identifier utilizing a combination of numbers from the last four digits of their phone number and order of recruitment for anonymity. All data was collected from the site at the end of Phase II and transferred into an excel spreadsheet for statistical analysis. Data storage was on the project leader's password-protected laptop and will be until the completion of the program.

Results

Launched on August 29, 2021, the program ran for six weeks. Nine individuals participated in the program, averaging two to three participants per session. Attendance demonstrates that those in recovery are likely to be active members of a biweekly wellness program that optimizes their treatment and management therapies related to SUD.

Fifteen RTC clients participated during the six weeks; however, only nine complete data sets were attained. Attrition rates are related to varying discharge dates or overlap of RTC activities, such as visitation. Of the nine participants, the gender distribution was 22.2% Male compared to 77.8% Female, and the mean age was 45 years. Race data resulted in White/Caucasian (88.9%) and Native American or Alaska Native (11.9%) with education levels a high school (22.2%) or college (77.8%). Most participants (88.9%) reported regular exercise, while only 50% reported regular mindfulness practice. Noticeably, 88.9% reported a history of relapse, while the same percentage of persons reported that this was the first time seeking addiction treatment services.

Pre- and post-intervention WHOQoL-BREF scores were analyzed using *Intellectus Statistics™* software. Each participant's pre, post, and domain scores were manually registered into the statistic software*,* where a two-tailed paired samples *t*-test was performed based on an alpha value of .05. Despite clinically significant changes observed in all domains post-intervention, two were statistically significant—psychological and environment. The two-tailed paired samples *t*-test was significant based on an alpha value of .05, $t(8) = -5.56$, $p < .001$, indicating the null hypothesis is rejected as the difference in the mean pre-and-post psychological domain was significantly different from zero. The two-tailed paired samples *t*-test was significant based on an alpha value of .05, $t(8) = -3.08$, $p = .015$, indicating the null hypothesis is rejected as the difference in the mean pre-and-post environmental domain was significantly different from zero. Furthermore, 100% of participants reported enhanced QoL, social support, & confidence related to long-term sobriety post-intervention.

Implications for Practice Change and Potential Outcomes

Practical clinical considerations and interventions will enhance personal, environmental, and behavioral factors that promote positive outcomes and improve recovery capital. Developing in-person group exercises and education activities with RTC clients seeking recovery will promote early community experiences. Group exercise combined with sober fellowship utilization can improve self-efficacy, knowledge, and goals while building a foundation of social support that establishes resiliency and recovery retention among the recuperating person and their communities. Recovery factors among persons and communities are symbiotic and increase recovery extension and are the ultimate goal since relapse rates continue to rise significantly beyond the proposed 85% or more in the first year of sobriety. The overall wellbeing of persons who experience SUDs and their micro and macro support systems need absolution from this devastating and deadly public health crisis.

Incorporating sober fitness fellowship programs as an adjunct therapy in conjunction with existing treatment options would provide hope and reprieve for the SUD person and their community. An all-encompassing approach such as individualized, family, and group therapies, sober-friendly networking, and recovery programs that model 12-step that provide ongoing health maintenance education is vital to increasing recovery capital efforts. Group exercise can maintain recovery efforts, but it introduces and supports social opportunities and networking that optimizes peer support that boosts resilience in overcoming barriers and obstacles. Group exercise offers feasibility in financial barriers and mimics traditional 12-step programs that are highly successful. However, combination therapies are validated to improve treatment compliance and retention rates across all individual groups of SUD persons (De Giorgi et al., 2018). A fact of this magnitude cannot be overlooked.

Budget and Funding

The budget for this project was about $2,000 to construct and pay for updated flyers, guidebooks, and mindfulness journals. There were no grants or scholarships utilized; therefore, charitable donations from friends and family and the Reps For Recovery fundraising event held in May 2021 supported costs related to the project (See Appendix B, Table B4).

Sustainability

Establishing Community to Extend Recovery Through Sober Fitness Fellowship is Phase II of The DREAMER Project. TDP is a legacy project of Arizona State University Edson College of Nursing and Health Innovation is in a five-year partnership with the project site. There are four subsequent phases, this project being the second of five. Future Doctor of Nursing Practice students' exploration might include alumni resources per stakeholder and participant requests once established in-person protocols exist.

Project equipment and standardized videos were provided and created during Phase I for clients enrolled at the RTC. Phase I proved statistically significant. The RTC can choose to implement activities to enhance recovery capital; however, they will need to acquire outside organizations for ongoing support in these areas, such as wellness instructors certified in yoga, sound bowl, meditative nature walks, journals, and personal trainers to meet group exercise needs and more. The feasibility and sustainability of this project in this current Phase are high due to reproducibility from a cost and time standpoint.

Strengths and Limitations

This quality improvement project's strengths include in-person and individualized RTC client needs, group engagement among like-minded sober persons, high feasibility and sustainability, and providing support to behavioral techs. In contrast, limitations include small

sample size and number of participants due to short and varying RTC enrollment periods, facility

activities overlapped session times and limited to supervised and indoor activities.

Summary, Implications, and Future Recommendations

Sober group community reinforcement approach combined with exercise supports

adjunct treatment methods, improved QoL, and confidence boost related to recovery capital.

Implications involve combating 85% relapse rates, improving health outcomes related to

substance use disorders, self-efficacy, and loss to follow-up barriers for those who seek addiction

or mental health treatment. Future recommendations include identifying and utilizing support

staff as site champions, educating clinical and support staff on interventions, and increasing

session days and times to improve enrollment. Additionally, implementing a group exercise

program most days of the week for in-and-out-patient facilities while adopting post-discharge

surveys at 30-day intervals to attain intervention attrition and relapse rates may provide valuable

evidence. Finally, further consideration of facilities to create an in-house application, online

meeting platforms for alumni, and website resources to exercise and mindfulness programs mey

prove beneficial. In a post-survey needs assessment, most participants reported that these

resources would improve recovery capital if offered.

<div align="center">

Conclusion

</div>

Practical clinical considerations and interventions proposed will enhance personal,

environmental, and behavioral factors that improve recovery capital. A sober fitness fellowship

can improve self-efficacy, knowledge, and goals through enhanced social support to establish

resiliency and recovery retention. Because recovery factors among persons and communities are

symbiotic, it is perilous not to recognize them as adjunct therapies, especially since relapse rates

continue to rise significantly within one year of sobriety. The overall wellbeing of persons who

experience SUDs and their micro and macro support systems need absolution from this

devastating and deadly public health crisis. The missing link may be connectedness among like-

minded persons within sober fitness fellowship communities.

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Appendix A

Evaluation and Synthesis Tables

Table A1

Evaluation Table for Qualitative Studies

Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Major Themes Studied/ Definitions	Measurement/ Instrumentation	Data Analysis	Findings/ Themes	Level/ Quality of Evidence; Decision for/ Application to practice Generalization
(Nowakowski-Sims & Bullard, 2018). Relearning to live life without substances: A grounded theory of the impact of group physical exercise on sobriety. **Country:** United States. **Funding:** Barry University Faculty Research grant. **Bias:** None stated or inferred.	The Convoy model of social relations emerged through findings.	**Design:** Qualitative Grounded Theory; constructivist grounded theory strategies. **Method:** Interview compiled of seven open-ended questions; expansion and clarification allowed. **Purpose:** Role of group PA as preventive and therapeutic intervention on SUD adults.	**Sample:** (n=16) **Demographics:** Male (n=13), Female (n=3); Age 22 to 54 years (M = 31.81, SD = 8.23). All reported heavy AUD, SUD, or both from 2 to 14 years, length of sobriety between 3 and 84 months (M = 45.19 months, SD = 24.43 months).	● Tell me about your past struggles with substance use. Where are you today with those struggles? ● What has been most helpful in your recovery? ● What are your beliefs about the role and usefulness of exercise in improving health? ● How has EX impacted your recovery? ● What's it like to participate in a	**Data Collection:** 11 months; Sixteen 45–90-minute tape-recorded interviews; researcher memos concerning thoughts and feelings with transcribed content. **Data Dependability:** the two researchers' peer-reviewed emerging categories and grounded theory; Two non-participant SBR persons	Charmaz's grounded theory strategies, line-by-line open coding, independent/ group agreeance coding, selective coding, visual model.	(1) GRP PA is helpful to maintain SBR. (2) Parallel process between: Phase I achieving SBR Phase II: maintaining SBR. (3) Mirrors 12-step models that create a sense of relief; no longer alone. (4) GRP PA is paramount to maintaining sobriety.	**Level of Evidence:** VI **Strengths:** Saturation achieved; visual model emerged (Relearning to live life without substances). **Weakness:** Convenience and snowball recruitment method; potential costs of PA GRP programs.

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Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Major Themes Studied/ Definitions	Measurement/ Instrumentation	Data Analysis	Findings/ Themes	Level/ Quality of Evidence; Decision for/ Application to practice Generalization
			All required having been in recovery and participating in GP PA for three months minimum. **Setting:** A single group exercise gym. **Attrition:** None stated.	group exercise class? ● Is there any benefit to working out with others? ● Is there anything negative about working out with others? ● How has the group exercise experience impacted your recovery? Failing to succeed, participating in a program, and belonging to a community. Parallel process between achieving and maintaining sobriety. **Definitions:** None stated.	who engage in GRP PA reviewed analysis to establish confirmability.			**Feasibility:** High due to reproducibility from a cost and time standpoint. **Application:** Relevant for adjunct treatment for all AUD, AUD, or combo persons; reinforce 12-step model with GRP PA for increased SBR.

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Table A2

Evaluation Table for Quantitative Studies

Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
(Brown et al., 2016). An exploratory analysis of changes in mood, anxiety and craving from pre- to post-single sessions of exercise, over 12 weeks, among patients with alcohol dependence. **Country:** United States. **Funding:** Grant; National Institute on Alcoholism and Alcohol Abuse. **Bias:** Limitations include small sample size, single	Lifestyle modification component of Relapse Prevention model.	**Design:** Randomized controlled trial **Purpose:** Examine acute effect of PA on change in mood, anxiety, and urges to drink pre/post-exercise sessions each week x 12 weeks; also determine if acute effect maintained throughout 12-week program. **Method:** Participants recruited from the community and intensive alcohol treatment program completed assessments, interviews at BL, 12-week (end of treatment), and 6-month follow-ups.	**Sample:** (n=26) **Database Search:** None stated or inferred. **Demographics:** AUD persons; 11 (48%) females; mean age 43.46 (SD = 11.50); Caucasian (n=24; 92.3%); 17 (55.4%) some or more college. **Setting:** Fitness center at a Hospital. **Exclusion:** Non-alcoholic SUDs, persons with eating, bipolar, and psych disorders, suicidal ideation, physically disabled,	**IV1:** PA **DV1:** Mood **DV2:** Anxiety **DV3:** Cravings **Definitions:** None stated. **PA:** Moderate intensity: treadmill, elliptical, stationary bike; groups of 2-5; 20-40 minutes per session.	Self-developed single item 11-point Likert scale for 3DVs. **Validity/ Reliability:** None stated. Single item 11-point Likert scale for Mood and Anxiety used in other studies; same scale created to measure Craving.	Examined three ways: (1) calculated pre- to post-exercise changes for 3 DVs; calculated the CIs around each difference score/average change across 12-sessions, (2) Jointpoint Analysis, (3) unbiased Cohen's d1 values for each session and the average effect size across the 12-week study period.	**DV1:** Mood (Intercept = −.01 (ES = .07), 95% CI [−.14, .12,], Z = −.12; Slope = .04 (ES = .01), 95% CI [.02, .06], Z = 3.38). **DV2:** Anxiety (Intercept = −1.32 (ES = .05), 95% CI [−1.42, −1.22], Z = −26.06; Slope = −.01 (ES = .01), 95% CI [−.03, .01], Z = −1.36). **DV3:** Craving (Intercept = −.78 (ES = .07), 95% CI [−.91, −.65], Z =	**Level of Evidence:** II **Strengths:** Stable reduction in anxiety, increased mood from pre/post PA and over 12-weeks, decreased cravings across 12-weeks. **Weakness:** Small sample size, no control condition, single-item assessments of mood/anxiety/craving not validated. **Feasibility:** High due to reproducibility from a cost and time standpoint.

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Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
assessments of mood, anxiety, and craving have no validation but used in other studies.			current/anticipated pregnancy. **Attrition:** None. Average participation 8.44 (SD=4.12) (70.3%: out of 12 sessions); 16/26 participants (62%) ≥ 8 sessions; 9 participants (35%) completed all.				−10.89; Slope = .02 (ES = .01), 95% CI [.002, .04], Z = 2.32).	
(Giménez-Meseguer et al., 2020). The benefits of physical exercise on mental disorders and quality of life in substance use disorders patients: Systematic review and meta-analysis. **Country:** Spain **Funding:** None.	None stated, and none inferred.	**Design:** SR/MA, PRISMA and Meta-Analysis and Systematic Reviews of Observational Studies (MOOSE). **Purpose:** Perform updated analysis of PA benefits in AUD and SUD persons, quantify effect of PA on mental health disorders, cravings, and QoL, and compare EX's effects with commonly used body-mind practices.	N= 59 studies **Database Search:** PubMed and Web of Science, and Scopus. **Demographics:** Persons with varying backgrounds, as studies selected, measured EX's acute and long-term effect on persons with AUD and SUD. **Setting:** None stated.	IV1: PA DV1: Physical condition DV2: QoL DV3: Stress DV4: Anxiety DV5: Depression DV6: Cravings DV7: Abstinence	PEDro (5 and 6 discarded as no blinding in performing SR/MA occurred) modified 9 item scale. Trials evaluating EX require a total PEDro score of 8/10 to be optimal. **Validity/ Reliability:** The 95% confidence interval=.57–.76. PEDro scale items' reliability varied from fair to	SSMD calculated, including respective 95% CI. Average score of accepted studies was 4.97 (±1.85) out of 9 Trim and Fill Test	**DV1:** Physical condition: Too generic = no data extracted. **DV2:** QoL: Trim and Fill adjusted values for Role Emotional (SMD = -0.76 (CI: -0.93, -0.58); Z = -12.78; p = 0.000) and Mental Health (SMD = -0.57 (CI: -0.88,	**Level of Evidence:** I **Strengths:** Relevant results about benefits of EX for persons with SUD confirmed. **Weakness:** Inclusion of both RCT and non-RCT studies. Different variables and measurement instruments used. 35/59 studies did not control for adherence to interventions.

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Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
Bias: Limitations resulting in excessive dropouts, lack of control group, different instruments, and no pre-addiction severity rating preintervention. Trim and Fill were used to test publication bias; nothing significant was substantiated.		**Method:** Studies measured the acute effect of exercise (a single session), and experimental or quasi-experimental studies measured long-term effect of exercise in AUD or SUD patients.	**Exclusion:** Animal use, patients <18, tobacco only, non-English or Spanish languages, no case, review, or observational studies, no PA application, studies whose authors are unreachable for clarification. **Attrition:** None stated.	**DV8:** Psychiatric/ psychological **Definitions:** None stated. PA: pure aerobic or aerobic/strength combo.	substantial, while the total PEDro score's reliability was fair to good.		-0.26) Z = -5.37; p = 0.000) **DV3:** Stress: (k = 4; SMD = 1.11 (CI: 0.31, 1.91); z = 2.73; p = 0.006) **DV4:** Anxiety: (k = 8; SMD = 0.50) CI: 0.16, 0.84) **DV5:** Depression: (k = 10; SMD = 0.63 (CI: 0.34, 0.92); z = 4.31; p < 0.0001) **DV6:** Cravings: (k = 3; SMD = 0.89 (CI: -0.05, 1.82); z = 1.85; p = 0.06)	**Feasibility:** High due to reproducibility from a cost and time standpoint.

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Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
							DV7: Abstinence: 25/59 measured; 17/25 showed statistical significance. **DV8:** Psychiatric/ psychological: Positive impact on stress, anxiety, and depression.	
(Wang et al., 2014). Impact of physicale exercise on substance use disorders: A meta-analysis. **Country:** Not stated. **Funding:** ISP grant from Scientific and Technological Commission of Shanghai, National	Not stated; Inferred Transtheoretical Model or Social Cognitive Model.	**Design:** MA using PRISMA. **Purpose:** Verify treatment effects of chronic physical EX on various SUD. **Method:** RCTs: effects of PA on SUD between 1990 - 2013. Four main outcome measures: abstinence rate, withdrawal symptoms, anxiety, and depression through MA integration.	**N=** 22 articles **Database Search:** PubMed, Web of Science, Elsevier, China National Knowledge Infrastructure, and China Info. **Demographics:** Articles studying interventional effects of PA drug abuse, RCTs, age >18 who use alcohol, illicit drugs, and nicotine	**IV:** PA **DV1:** Abstinence rates **DV2:** Withdrawal symptoms **DV3:** Anxiety levels **DV4:** Depression levels	CI set at 95%, p value < 0.05, funnel plot visual, Egger's test, false safe number, abstinent rate, withdrawal symptoms, BDI, POMS, SAS, STAI, SDS, HAS, MPSS, HRSD, CESD. **Validity/ Reliability:** Standardized and proven instruments.	PRISMA, Q test, I^2 test, fixed effects model.	**DV1:** Abstinence rates: (OR=1.69 (95% CI: 1.44, 1.99), z=6.33, p, 0.001) **DV2:** Withdrawal symptoms: (SMD =21.24 (95% CI: 22.46, 20.02), z =22.00, p,0.05) **DV3:** Anxiety levels: (SMD	**Level of Evidence:** I **Strengths:** Cited throughout other higher-level studies; including flow charts, tables, and forest plot figures. **Weakness:** RCTs from 1990-2013 only due to lack of available studies, male participants lacked in most studies; assessment tools in

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								Generalization
Science Foundation of China, and the Project of Scientific and Technological Innovation grant from Shanghai University of Sport. **Bias:** Limitations in literature collection may cause publishing bias. Some studies were mostly comprised of women.			via DSM-II(R)/IV. Study inclusion from chronic PA; primary measures rate of abstinence, withdrawal symptoms, depression level, anxiety level. **Setting:** None stated. **Exclusion:** Studies on acute exercise, reviews; no preventative, inquiring, cohort, animal studies, no crossover trials, PA, and addiction. **Attrition:** None stated.	**Definitions:** None stated. PA: aerobic and mind-body exercises.			=20.31 (95% CI: 20.45, 20.16), z =24.11, p,0.001) **DV4:** Depression levels: (SMD =20.47 (95% CI: 20.80, 20.14), z =22.76, p,0.01) PA treatment has long-term effects on SUD; likely due to brain structure/ function.	studies varied considerably. **Feasibility:** High due to reproducibility from a cost and time standpoint.
(Gutierrez et al., 2020). Recovery as life transformation: Examining the relationships	Hope Theory; structured theoretical model.	**Design:** Quantitative cross-sectional study. **Purpose:** Aim to evaluate psychosocial factors present within	N= 412 adults **Database Search:** None stated. **Demographics:** (n = 206, 50% males; n =	**IV1:** Recovery progress **DV1:** Connectedness and belonging	AHS, Life Orientation Test, AWARE, PAWS, RAS-DS, CANSAS, Cronbach's alpha. **Validity/**	SEM, confirmatory factor analysis, chi-square statistic, root mean square error of	**IV1:** Recovery progress: **DV1:** Connectedness and belonging:	**Level of Evidence:** III **Strengths:** As participants continued development of recovery, they were less likely to be at risk for

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between recovery, hope, and relapse. **Country:** United States. **Funding:** None stated. **Bias:** No known conflict or biases to disclose.		various stages of recovery. 1. What is the association between recovery progress and risk of relapse? 2. To what extent does hope mediate the relationship between recovery progress and risk of relapse? **Method:** Qualtrics crowdsourcing from online platform, brief demographic Questionnaire, survey, and instrument tools.	205, 50% females; n = 1, .24% transgender); age ≥18; in drug/alcohol recovery; final sample: early recovery (n = 139), middle recovery (n = 136), late recovery (n = 137); Average age 44.30 (SD = 14.67), range 18 to 81; 284 (71%) Caucasian, 56 (14%) Black/African American, 38 (9%) Hispanic/ Latin, 12 (3%) Asian, 6 (%)American Indian/ Alaska Native. **Setting:** None stated. **Exclusion:** Age <18; currently in relapse; Qualtrics users incorrectly responded to four attention fillers.	DV2: Mastering my illness DV3: Looking forward DV4: Doing things I value IV2: Hope DV5: Pathways DV6: Agency DV7: Risk of relapse IV1: Recovery progress DV8: Hope **Definitions:** For study purposes, slip consists of a "time where [participants] used, instantly	**Reliability:** AHS validity (r = .60), Life Orientation Test Cronbach's alpha indicated consistency for Agency (α = .91) and Pathways (α = .86), AWARE Cronbach's alpha (α = .95), RAS-DS Cronbach's alpha (α = .96), CANSAS validated in earlier versions.	approximation comparative fit index, PROCESS macro mediation model, bivariate correlations, non-probability sampling.	(r = .76, p < .001) DV2: Mastering my illness: (r = .83, p < .001) DV3: Looking forward: (r = .95, p < .001) DV4: Doing things I value: (r = .77, p < .001) IV2: Hope DV5: Pathways: (r = .85, p < .001) DV6: Agency: (r = .92, p < .001) DV7: Risk of relapse: (r = .34, p < .001)	relapse. Doing things I value, Looking forward, Mastering my illness, Connectedness, and belonging had strong relationships to recovery progress, resulting in reduced relapse risk; inclusion of tables and figures; established hope as a target intervention; strong preliminary results for future studies. **Weakness:** Cross-sectional study, recruited from an online platform = limiting generalizability. **Feasibility:** High due to reproducibility from a cost and time standpoint.

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			Attrition: None stated.	regretted it, and quickly returned to sobriety." Relapse is a "return to a period of routine, continued substance use."			**IV1: Recovery progress** **DV8:** Hope: (r = .81, p < .001)	
(Linke et al., 2019). The Go-VAR (Veterans Active Recovery): An adjunctive, exercise-based intervention for veterans recovering from substance use disorders. **Country:** United States. **Funding:** UC San Diego Health Sciences Academic Senate. **Bias:** None stated.	Socio-Ecological Model and Social Cognitive Model.	**Design:** Quantitative pilot study; pre/post. **Purpose:** Evaluate evidence-based PA interventions, incorporate novel adherence/retention strategies tailored for SUD, and deploy practical measurement methods. **Method:** 12-week program; 3 components. 1. Weekly psychoeducation classes addressing (a) how PA aids recovery, (b) motivation/ goal setting	N= 15 adults **Database Search:** None stated. **Demographics:** Mean age = 45 [SD = 9.68], 13 men, 13% Hispanic, 60% White; Most common substance reported = alcohol (86%), marijuana (27%), methamphetamines (13%), cocaine (7%). No severe psychiatric disorders; ages 18-65; current	**IV:** PA **Substance Use:** **DV1:** Days of Alcohol Use per Month **DV2:** Drinks Per Day **DV3:** Days of Drug Use per Month **Fitness Test:** **DV4:** Baseline Heart Rate **DV5:** Post Step Heart Rate (Immediate)	Fitbit Charge HR; baseline assessment for inclusion criteria; qualitative interview for satisfaction/ perceived group dynamics at end; Time-Line Follow Back to identify use in 30 days before baseline/ 90 days before final assessment; Godin Leisure-Time Exercise Questionnaire for PA levels at baseline/ post 12 weeks; MSPSS, PANAS, PHQ-9, Kesler 6, PCL-M at	SPSS Version 22; p value <0.05; Mean SD; One sample t-test; degrees of freedom.	**IV:** PA **Substance Use:** **DV1:** Alcohol Use Days/ Month: BL Mean (SD) 18.1; Post 2.5; p <0.001 **DV2:** Drinks/ Day: BL Mean (SD) 5.2; Post 0.8; p <0.001 **DV3:** Drug Use Days/ Month: BL Mean (SD) 26.6; Post 5.7; p<0.001 **Fitness Test:**	**Level of Evidence:** II **Strengths:** YMCA's national presence allows for extensive dissemination, basic statistical tests conducted inform measures of efficacy for future research, table, and figures for visual aids, **Weakness:** Not adequately powered due to small sample size, no accelerometer verification, transportation obstacles for participants.

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		for PA, (c) PA barriers, (d) PA maintenance. 2. YMCA gym membership for daily PA, weekly group PA, individual PA counseling sessions; Goal (a) 150+ min/wk aerobic PA, (b) 2-3 weekly strength training, (c) ≥2 weekly flexibility sessions. Fitbit Charge HR is used to increase motivation for daily PA; assessment/measurement tool for data.	SUD/AUD diagnosis in outpatient/aftercare program; fluent English; minimum <60 minutes/week aerobic PA; <2 days/week strength train. **Setting:** Combination: VA Sand Diego Healthcare Systems, Alcohol, and Drug Treatment Program, YMCA. **Exclusion:** Medical or psychiatric conditions deemed unsafe by study physician and licensed investigative psychologists; PA requirements not met.	**DV6:** Post Step Heart Rate (1 min) **DV7:** Post Step Heart Rate (2 min) **DV8:** Sit and Reach **DV9:** Push-Ups **DV10:** Sit-Ups **Psychosocial: DV11:** MSPSS **DV12:** PANAS positive effect **DV13:** PANAS negative effect **DV14:** Kesler 6 **DV15:** PHQ-9 **DV16:** PCL-M **Definitions:** PA = 150+ min/wk aerobic PA, 2-3	baseline/follow-up assessments. **Validity/ Reliability:** None stated; Standardized and proven instruments.		**DV4:** BL Heart Rate: Baseline Mean (SD) 72.7; Post 68.7; p >0.001 **DV5:** Post Step HR (Now): BL Mean (SD) 118; Post 103.2; p >0.001 **DV6:** Post Step HR (1 min): BL Mean (SD) 86.8; Post 84.1; p >0.001 **DV7:** Post Step HR (3 min): BL Mean (SD) 80.3; Post 71; p >0.001 **DV8:** Sit and Reach: BL Mean (SD) 3.6; Post 2.7; p >0.001	**Feasibility:** Medium due to reproducibility from a cost and time standpoint; needed equipment/membership and verification of adherence.

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			Attrition: n = 4; (n = 2) relocation; (n = 2) inpatient.	weekly strength training, ≥2 weekly flexibility sessions, and walking.			**DV9:** Push Ups: BL Mean (SD) 21.7; Post 31.2; $p = 0.01$ **DV10:** Sit Ups: BL Mean (SD) 27.3; Post 42; $p = 0.03$ **Psychosocial:** **DV11:** MSPSS: BL Mean (SD) 4.79; Post 5.39; $p = 0.98$ **DV12:** PANAS positive effect: BL Mean (SD) 33.87; Post 31.73; $p = 0.58$ **DV13:** PANAS negative effect: BL Mean (SD) 16.6; Post 16; $p = 0.71$ **DV14:** Kesler 6: BL Mean (SD)	

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							15.8; Post 13.36; p = 0.02 **DV15:** PHQ-9: BL Mean (SD) 10.33; Post 7.91; p = 0.21 **DV16:** PCL-M: BL Mean (SD) 43.8; Post 41.45; p = 0.71	
(Thompson et al., 2020). Physical activity and the prevention, reduction, and treatment of alcohol and other drug use across the lifespan (The PHASE review): A systematic review. **Country:** United States. **Funding:** National Institute	Mental Health and Physical Activity framework demonstrating relationships between 1. Behaviors to change, 2. Optimal PA needed 3. Mechanism involved, 4. Behavioral Support, 5. Intervention dose, 6. Effective behavior change processes related to AUD/ SUD.	**Design:** SR of RCTs and pre/post. **Purpose: Primary aim:** assess effects of PA interventions on AUD/SUD outcomes. **Secondary aim:** Describe effect of PA dose, possible mechanisms of effect, impact of intervention type/ dose, significant intervention components on AUD/SUD. **Method:** Data synthesis of 32 studies: PA effect	N= 32 studies **Database Search:** Comprehensive search/ supplemental search; >35 academic databases; grey literature. **Demographics:** Conducted among persons diagnosed with SUD; seeking AUD/SUD treatment.	**IV1:** Effects of PA **DV1:** Prevention **DV2:** Reduction **DV3:** Treatment **Definitions: Prevention:** reducing risk of progression to alcohol/ drug use; **Reduction:** supporting individuals to reduce alcohol/	Cochrane Risk of Bias Tool, Risk of Bias in Non-randomised Studies of Interventions, Grading of Recommendations, Assessment, Development and Evaluations, Pride Questionnaire, Youth Risk Behavior Survey, American Drug and Alcohol Survey, Daily drinking Questionnaire, Alcohol Use Disorders Identification Test,	MA, random effects model, risk ratio with 95% CI, Mean differences, SMD, random effect, fixed effect, risk ratio.	**IV1:** PA Effects **DV1:** Prevention: Alcohol use risk ratio is 0.72 (95% CI: 0.61 to 0.85) (estimate from random-effect MA); 0.72 (95% CI: 0.61, 0.84) (estimate from fixed-effect MA). **DV2:** Reduction: Drinks per week	**Level of Evidence:** I **Strengths:** Highlights need for rigorous research exercise dose, showed significant effect of PA on prevention of alcohol initiation, promising short-term effect, figures, tables, **Weakness:** Limited reports of cost-effectiveness, heterogenicity limit firm conclusions.

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Generalization |
|---|---|---|---|---|---|---|---|---|
| for Health Research Applied Research Collaboration South West Peninsula under Research for Patient Benefit (RfPB) Programme.

Bias: Some risk in four total studies, though biases not stated; otherwise, ruled out using Cochrane Risk of Bias Tool, Risk of Bias in Non-randomised Studies of Interventions, Grading of Recommendations, Assessment, Development, and Evaluations. | No model stated; Social Cognitive Model inferred. | on prevention, reduction, treatment through MA integration. | Peer-reviewed: 11 studies present AUD/SUD data, 14 AUD focus, seven SUD.

Setting: Varying across all studies.

Exclusion: No PA intervention; studies outside years 1975-2017; some multicomponent interventions excluded as PA not deemed a focus or sufficient intensity; participation not evident.

Attrition: None stated. | drug use for harm reduction; **Treatment:** promote abstinence/ relapse prevention during/ after treatment of alcohol/ drug use

PA: Interventions varied greatly in type, intensity, mode of delivery, duration. | Drug Use Disorders Identification Test, Native American Drug Use Survey, The Weekly Substance Use Inventory, Short Michigan Alcoholism Screening Test, Drug Abuse Screening Test-20, Timeline Followback.

Validity/ Reliability: None stated; Standardized and proven instruments. | | (SMD) -0.27 (95% CI: 0.69 to 0.15) (random-effect MA); -0.24 (95% CI: 0.51 to 0.03) (fixed-effect MA).

DV3: Treatment: Alcohol abstinence risk ratio 1.56 (95% CI: 0.78 to 3.14) (fixed-effect MA); 1.79 (95%: 1.29 to 2.47) (random-effect MA). | **Feasibility:** High due to reproducibility from a cost and time standpoint. |

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Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
(Ashford et al., 2018). Technology and social media use among patients enrolled in outpatient addiction treatment programs: Cross-sectional survey study. **Country:** United States. **Funding:** National Institute on Drug Abuse. **Bias:** None stated.	None stated; Problem Behavior Theory and Social Cognitive Model inferred.	**Design:** Quantitative cross-sectional survey study. **Purpose:** Provide data on SUD person's mobile phone ownership rates, usage patterns on multiple digital, interest in use of platforms to monitor personal recovery. **Method:** Recruitment of persons attending outpatient services in four programs were surveyed with the Questions noted in measurement/ Instrumentation (see section); data analysis was performed.	N= 259 Three sample age groups: Millennials (age 18-35), Generation Xers (age 36-51), Baby Boomers (age ≥52). **Database Search:** None stated. **Demographics:** Male (72.9%, 188/259), African American (62.9%, 163/259), annual incomes < $10,000 (62.5%, 161/259), average age 39 (SD 12.24). Requirements: current enrollment in outpatient program at time survey; age > 18; no intellectual/ developmental disability; provide informed consent.	**IV1:** TU effects on **DV1:** Substance Use and Recovery on Soc-M **DV2:** Support on Soc-M **DV3:** Induce Desire to Use **DV4:** Soc-M Monitoring for Recovery Support **DV5:** Join Online Support Group **Definitions:** None stated.	Technology utilization questions: 1. How often have you seen drug cues—things that made you want to use drugs on social media? 2. How often have you seen recovery information on social media? 3. Have you posted information on social media about being in recovery? 4. Do you think social media would be a good place to receive information to help you avoid relapse? 5. Would you join an online support group to help you during your recovery? 6. Would you join a Facebook support group to help you during your recovery?	SAS 9.3; binary and ordinal logistic regression models (included gender/race as covariates), cross-tabulations, CI, $p < .05$, Pearson Chi-square, odds ratio.	**IV1:** TU effects on **DV1:** Substance Use and Recovery Information on Soc-M: Millennials less likely to see than Baby Boomers (P=.01, OR 0.31 [95% CI 0.12-0.77]); Xers and Baby Boomers (P=.19, OR 0.5 [95% CI 0.20-1.36]); Millennials and Generation Xers (P=.07, OR 0.58 [95% CI 0.32-1.05]) **DV2:** Support on Soc-M: 66.1% (171/259) persons believe	**Level of Evidence:** III **Strengths:** Demonstrates ongoing need for research on TU among SUD persons, promotes targeted Soc-M platforms, demonstrates need to curtail SUD treatment with TU to younger generations (will soon make up majority of SUD population), can reach lower socioeconomic persons due to widespread Soc-M/ TU use, promotes aftercare. **Weakness:** Soc-M content can be harmful, sample primarily black, low socio-economic males = not reflective of general population, geographical limitation as conducted in a single city.

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Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
			Setting: 4 intensive outpatient SUD treatment facilities in Philadelphia, PA. **Exclusion:** Missing demographic information; reporting zero technology use. **Attrition:** None stated.		7. Would you sign up to receive text messages to help you during your recovery? 8. Would you use an app on your phone to help your recovery from alcohol or substance use? 9. How would you like to access a digital outpatient treatment program to aid during recovery? 10. Would you allow your social media account monitoring to help prevent relapse? **Validity/ Reliability:** None stated.		Soc-M is good to promote recovery/ prevent relapse; did not differ much across generations (χ2 2=6.11, P=.05). **DV3:** Induce Desire to Sometime Use: 47.4% (90/190) with Soc-M 73.6% (190/259); (χ2 1=3.20, P=.07) **DV4:** Soc-M Monitoring for Recovery Support: 50.9%, 132/259) no to monitor Soc-M to support recovery; no significant differences across	**Feasibility:** High due to reproducibility from a cost and time standpoint.

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							generations ($\chi2$ 2=2.34, P=.31). **DV5:** Join Online Support Group: 69.0%, 179/259) would join to support personal recovery; differences not significant among generations.	
(Jason et al., 2020). Context matters: Home-level but not individual-level recovery social capital predicts residents' relapse. **Country:** United States. **Funding:** National Institute on Alcohol Abuse and Alcoholism	None stated; Strategic Prevention Framework and Social Cognitive Model inferred.	**Design:** Quantitative single-level longitudinal study. **Purpose:** Contribute to literature on prediction of substance use relapse, using sophisticated systems' approaches to individuals and their contexts. **Method:** Field research staff collected interviews at BL every four months over two years. Participants were	**N**= 602 participants **Database Search:** None stated. **Demographics:** 51% male; mean age 37.0 (SD = 10.5); European American (78.8%), African American (8.5%), Latinx (10.0%), all other ethnicities 2.7% (Asian American,	**IV1:** House Recovery Factor **IV2:** Resident Recovery Factor **DV1:** Hope **DV2:** Social Support **DV3:** Sense of Community **DV4:** Self-Esteem	World Health Organization Quality of Life Assessment-Brief, Drug Taking Confidence Questionnaire, Rosenberg's Self-Esteem Scale, Perceived Stress Scale, Interpersonal Support Evaluation List, Psychological Sense of Community, Snyder's State Hope Scale. **Validity/**	Standardized 2-level CFA model, raw factor variances, Bayesian 95% credibility interval, Maximum Likelihood Robust, p < .001, chi-square goodness of fit, Fit Statistics, raw	**IV1:** House Recovery Factor **DV1:** Hope: p = 0.814 **DV2:** Social Support: p = 0.919 **DV3:** Sense of Community: p = 0.577 **DV4:** Self-Esteem:	**Level of Evidence:** V **Strengths:** Study contributes to literature, defines a domain of recovery, identifies factors that represent individual/ group-level recovery capital elements, advances knowledge of environmental impact on SUD persons, tables, figures.

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Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice Generalization
Bias: None stated.		recruited and interviewed face-to-face by field research staff; measures initiated; multi-level CFA integrated.	Alaskan Native, American Indian, Pacific Islander). **Setting:** OH recovery homes in North Carolina, Texas, and Oregon. **Exclusion:** 34 entered OH for first time = we were not able to determine whether they relapsed, given that in the last data collection; 15 forced out because OH closed, and before second survey; 15 were missing reason for leaving and only filled out 1 survey before leaving. **Attrition:** None stated.	**DV5:** QoL **DV6:** Stress **DV7:** Efficacy **DV8:** Wages **DV9:** Probability of Relapse **Definitions:** None stated.	**Reliability:** None stated; Standardized and proven instruments.	variances, root mean square error of approximation, comparative fit index, Tucker–Lewis index	$p = 0.764$ **DV5:** QoL: $p = -0.977$ **DV6:** Stress: $p = 0.877$ **DV7:** Efficacy: $p = 0.681$ **DV8:** Wages: $p = -0.987$ **DV9:** Probability of Relapse: (standardized effect = .66, pseudo-R squared = .44); significant/ strong predictor of relapse. **IV2:** Resident Recovery Factor **DV1:** Hope:	**Weakness:** Data may not represent general recovery populations, three states measured, may not generalize to other types of recovery homes, sample is probably underpowered, lower-level evidence study. **Feasibility:** Medium due to reproducibility from a cost and longer time commitment.

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							$p = 0.691$ **DV2:** Social Support: $p = 0.487$ **DV3:** Sense of Community: $p = 0.259$ **DV4:** Self-Esteem: $p = 0.709$ **DV5:** QoL: $p = -0.673$ **DV6:** Stress: $p = 0.594$ **DV7:** Efficacy: $p = 0.385$ **DV8:** Wages: $p = -0.182$ **DV9:** Probability of Relapse: (standardized effect = .09, pseudo-R	

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							squared = .16); not significant.	
(De Giorgi et al., 2018). Psychosocial interventions in stimulant use disorders: A systematic review and qualitative synthesis of randomized controlled trials. **Country:** None stated. **Funding:** None stated. **Bias:** Studies assessed using tool in Cochrane Collaboration Handbook. It allows a rating of "low," "unclear," or "high."	None stated; None inferred.	**Design:** SR and qualitative synthesis of RCTs. **Purpose:** Provide clinicians with a comprehensive description of all available psychosocial interventions for SUDs and report the most recent evidence-based. **Method:** Data extraction: structured template for consistency and systematic appraisal. Data extracted embraced characteristics of studies, interventions. Qualitative synthesis: Two authors retrieved manuals for each psychosocial	N= 91 RCTs **Database Search:** Cochrane Drugs and Alcohol Group Register of Trials, Medline, Embase, CINAHL, ISI Web of Science, PsycINFO; hand-search of the reference list of retrieved articles. **Demographics: Studies:** age >18; SUD diagnosis. RCTs comparing psychosocial interventions, alone/ combo with pharmacology therapy, against no-treatment, waiting list, or other psychosocial treatment.	**IV1:** Psychosocial Interventions Used/ Available **DV1:** Cognitive Behavioral Coping Skill Treatment **DV2:** Gay Specific Cognitive Behavioral Therapy **DV3:** Relapse Prevention **DV4:** Community Reinforcement Approach **DV5:** Contingency Management	None stated. **Validity/ Reliability:** None stated.	None stated.	**IV1:** Psychosocial Interventions Used/ Available **DV1:** Cognitive Behavioral Coping Skill Treatment: improved outcomes for SUD, significantly reduced cravings, increased abstinence with lasting effects. **DV2:** Gay Specific Cognitive Behavioral Therapy: Significant / Sustained improvements	**Level of Evidence:** I **Strengths:** Summation of RCTs, psychosocial interventions deployed in SUD, tables, figures, only study of magnitude/ kind. **Weakness:** No statistical data was interpreted. **Feasibility:** High due to reproducibility from a cost and time standpoint.

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		intervention, including key principles; integration of data with main findings from all RCTs selected;	**Setting:** None stated. **Exclusion:** Review articles, editorials, letters, comments, conference proceedings, case reports/ series; dated before 1990; diagnosis with only disease names/ no diagnostic criteria; trials lacking control groups. **Attrition:** None stated.	**DV6:** Supportive-expressive psychodynamic Therapy **DV7:** Interpersonal Psychotherapy **DV8:** Family Therapy **DV9:** The 12-step Program **DV10:** Motivational Interviewing **DV11:** Individual/ Group/ Combo Drug Counseling: **DV12:** Meditation/ PA/ Mindfulness			in drug use and HIV prevention. **DV3:** Relapse Prevention: Reduced drug use post-treatment; more effective with severe SUD. **DV4:** Community Reinforcement Approach: Improved treatment compliance and psychosocial outcomes in cocaine use; increased retention rates. **DV5:** Contingency Management: significantly improved abstinence compared to	

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				Definitions: None stated.			CBT in most severe users. **DV6:** Supportive-expressive psychodynamic Therapy: Significant improvement in drug use and psychological functioning. **DV7:** Interpersonal Psychotherapy **DV8:** Family Therapy: Quicker decline in cocaine use among mothers with SUD. **DV9:** The 12-step Program: Reported active participation in 12-step combo therapy	

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							predicted less cocaine use. **DV10:** Motivational Interviewing: There are no benefits noted with MI alone; in conjunction with other interventions, it has short-term benefits = fewer days of drug use. **DV11:** Individual/ Group/ Combo Drug Counseling: reported improvements in drug use and severity when all individuals and groups deployed.	

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							DV12: Meditation/ PA/ Mindfulness: Increased abstinence, reduced craving and anxiety, decreased substance use among comorbid depressive and anxiety disorders.	

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Table A3
Synthesis Table

Study (Author, year)	Ashford et al., 2019	Brown et al., 2016	De Giorgi et al., 2018	Giménez-Meseguer et al., 2020	Gutierrez et al., 2020	Jason et al., 2020	Linke et al., 2019	Nowakowski-Sims & Bullard, 2018	Thompson et al., 2020	Wang et al., 2014
Design **LOE**	Quant III	RCT II	RCT SR/ Qual I	SR/ MA I	Quant III	Quant V	Quant Pilot II	Qual VI	RCT SR I	MA I
Sample										
n subjects	259	26	91	59	412	602	15	16	32	22
M-Age	39	43	>18	>18	44	37	45	31	>18	>18
Country	USA	USA	Not Stated	Spain	USA	USA	USA	USA	USA	Not Stated
Setting										
Inpatient										
Outpatient	X	X	X	X	X	X	X	X	X	X
Interventions										
ED	X	X	X				X		X	X
MF		X	X	X	X	X	X			X
PA		X	X	X			X	X	X	X
Group PA	X	X	X	X		X	X	X	X	
Individual PA			X	X	X	X	X		X	X
Intervention Length	One Time Survey	12 weeks 6-month FU	Varied	Varied	One Time Survey	2 years	12 weeks	One Time Survey	Varied	Varied
Recovery Progress	X		X		X	X	X		X	
Technology Utilization	X						X		X	
Theory/ Framework	Not Stated	Relapse Prevention Model	Not Stated; n/a	Not Stated; n/a	Hope Theory	Not Stated	Socio-Ecological/ SCM	Convoy Model of Social Relations	Not Stated; n/a	Not Stated; n/a

Key: **ED** Education **LOE** Level of Evidence **M-Age** Mean Age **MA** Meta-Analysis **MF** Mindfulness **MH** Mental Health **PA** Physical Activity **QoL** Quality of Life **RC** Recovery Capital **RCT** Randomized Controlled Trial **SCM** Social Cognitive Model **SBR** Sober/ Sobriety **SR** Systematic Review **USA** United States of America

Study (Author, year)	Ashford et al., 2019	Brown et al., 2016	De Giorgi et al., 2018	Giménez-Meseguer et al., 2020	Gutierrez et al., 2020	Jason et al., 2020	Linke et al., 2019	Nowakowski-Sims & Bullard, 2018	Thompson et al., 2020	Wang et al., 2014
Identified Outcomes										
Cravings		↓	↓	↓			↓			↓
Achieving SBR			↑			↑	↑		↑	
Maintaining SBR	↑		↑	↑	↑	↑	↑	↑	↑	↑
MH		↑	↑	↑		↑	↑			↑
Physical Health			↑	↑			↑		↑	
Enhanced Social Support	↑		↑	↑	↑	↑	↑	↑	↑	
QoL				↑	↑	↑	↑			
Identified Themes										
Connection/ Belonging	X		X	X	X	X	X	X	X	
Community	X		X	X	X	X	X	X	X	
PA promotes MH		X		X	X	X	X			X
PA promotes QoL				X	X	X	X	X	X	
PA promotes RC	X	X		X	X	X	X	X		X

Key: **ED** Education **LOE** Level of Evidence **M-Age** Mean Age **MA** Meta-Analysis **MF** Mindfulness **MH** Mental Health **PA** Physical Activity **QoL** Quality of Life **RC** Recovery Capital **RCT** Randomized Controlled Trial **SCM** Social Cognitive Model **SBR** Sober/ Sobriety **SR** Systematic Review **USA** United States of America
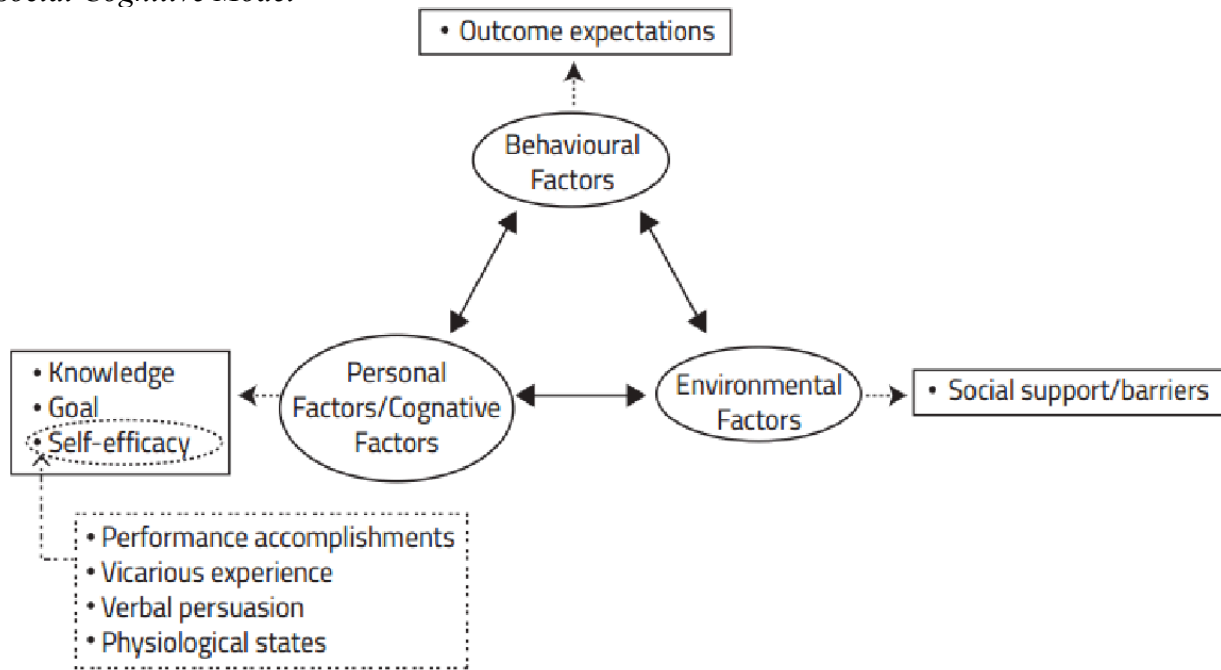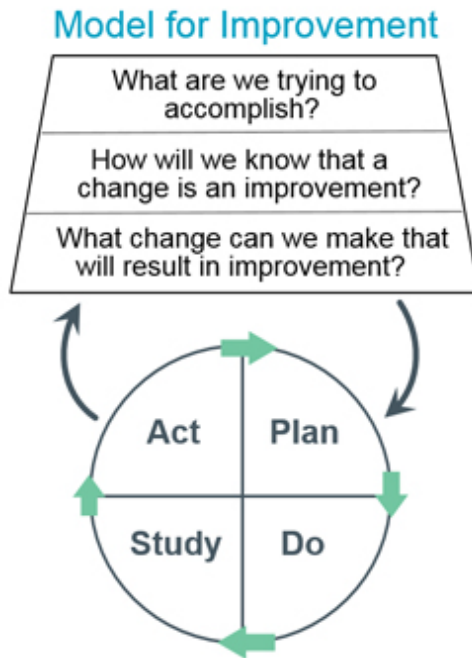
Appendix B

Models and Frameworks

Figure B1
Social Cognitive Model
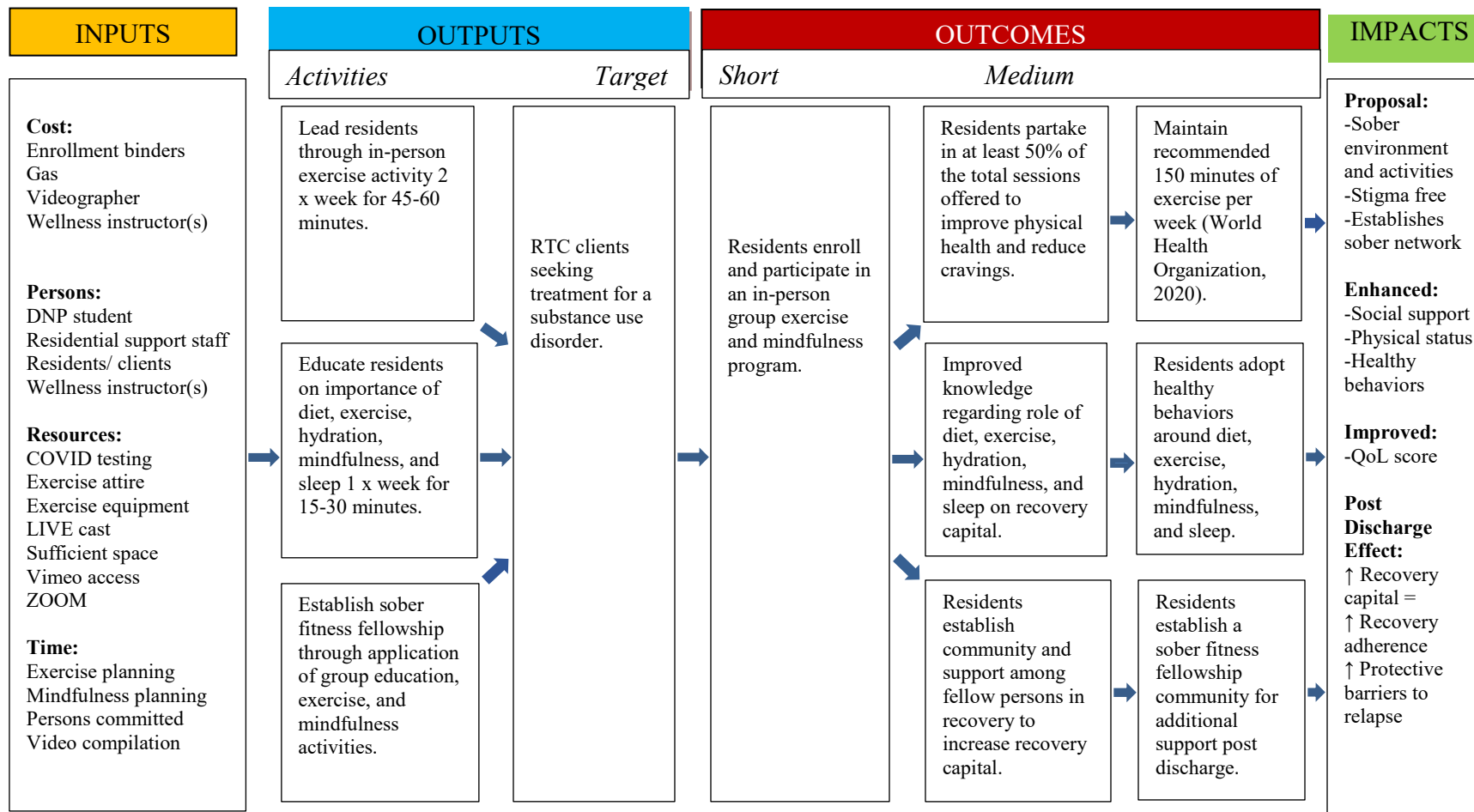

(Chin & Mansori, 2018)

Figure B2

Plan-Do-Study-Act (PDSA) Cycle

(Institute for Healthcare Improvement, n.d.)

Figure B3

Logic Model

Goals: To redevelop and implement in-person group exercise and lifestyle activities for residential treatment center (RTC) clients seeking treatment for a substance use disorder to improve recovery capital and extend recovery efforts.

INPUTS	OUTPUTS		OUTCOMES			IMPACTS
	Activities	*Target*	*Short*	*Medium*		
Cost: Enrollment binders Gas Videographer Wellness instructor(s) **Persons:** DNP student Residential support staff Residents/ clients Wellness instructor(s) **Resources:** COVID testing Exercise attire Exercise equipment LIVE cast Sufficient space Vimeo access ZOOM **Time:** Exercise planning Mindfulness planning Persons committed Video compilation	Lead residents through in-person exercise activity 2 x week for 45-60 minutes. Educate residents on importance of diet, exercise, hydration, mindfulness, and sleep 1 x week for 15-30 minutes. Establish sober fitness fellowship through application of group education, exercise, and mindfulness activities.	RTC clients seeking treatment for a substance use disorder.	Residents enroll and participate in an in-person group exercise and mindfulness program.	Residents partake in at least 50% of the total sessions offered to improve physical health and reduce cravings. Improved knowledge regarding role of diet, exercise, hydration, mindfulness, and sleep on recovery capital. Residents establish community and support among fellow persons in recovery to increase recovery capital.	Maintain recommended 150 minutes of exercise per week (World Health Organization, 2020). Residents adopt healthy behaviors around diet, exercise, hydration, mindfulness, and sleep. Residents establish a sober fitness fellowship community for additional support post discharge.	**Proposal:** -Sober environment and activities -Stigma free -Establishes sober network **Enhanced:** -Social support -Physical status -Healthy behaviors **Improved:** -QoL score **Post Discharge Effect:** ↑ Recovery capital = ↑ Recovery adherence ↑ Protective barriers to relapse

Assumptions: 1) Residents are interested in establishing a sober fitness fellowship community within a RTC while seeking treatment for substance use disorder. 2) Residents will engage in group exercise and education activities. 3) Residents will participate in group wellness presentations to promote healthy lifestyle behaviors that aid in recovery. 4) Residents value enhanced knowledge of physical and overall wellbeing. 5) Residents are motivated to apply knowledge, strategies, and activities upon completion of the 6-week cycle or discharge from facility. 6) Residents are willing to utilize sober fitness fellowship communities to extend recovery post-discharge.

Table B4

Budget Model

Projected Costs for Exercise and Mindfulness Interventions Implemented at a Residential Treatment Center (RTC)		
Essentials: Direct Cost	**Expenses**	**Donations**
Personnel		
Project Leader $42/hr x 6hr/wk x 6wks		$1,512.00 Volunteer
Certified Fitness Trainer $40/hr x 3hr/wk x 6wks		$720.00 Volunteer
RTC Director of Nursing $50/hr x 2hr/wk x 9wks		$900.00 RTC Absorption
RTC Clinical Director $50/hr x 2hr/wk x 9wks		$900.00 RTC Absorption
RTC Support Staff $20/hr x 2hr/wk x 9wks		$360.00 RTC Absorption
Essentials: Direct Cost	**Expenses**	**Donations**
Equipment & Materials		
Exercise Mat $15 x 60		$900.00 Provided in Phase I
Ab-Mat $25 x 60		$1,500.00 Provided in Phase I
Hip-Circle Band $25 x 60		$1,500.00 Provided in Phase I
Jump Rope $25 x 60		$1,500.00 Provided in Phase I
Sanitizing Supplies	$20.00	
1" Binder $2 x 30	$60.00	
Filler Paper $2.50/125 pack x 8	$20.00	
Mix Print; included color: Recruitment Flyers & Guidebook	$587.95	
Pens $5/12 pack x 5	$25.00	
75" Smart Capable TV $1750 x 2		$3,500.00 Provided in Phase I
Microphone Webcam $100 x 2		$200.00 Provided in Phase I
Essentials: Indirect Cost	**Expenses**	**Donations**
Operations		

Electricity & Air Cooling $150/mo x 1.25 mos		**$187.50** RTC Absorption
On-Site Gym Space $20/hr x 3hr/wk x 6wks		**$360.00** RTC Absorption
Project Leader Gas 96.7 mi x 12d	**$140.59**	
WiFi $100/mo x 1.25 mos		**$125.00** RTC Absorption
Total Project Cost:	**Total Expenses:**	**Total Donations:**
$15,018.04	**$853.54**	**$11,332.00**
RTC Actual Total Savings:	**RTC Direct Savings:**	**RTC Savings r/t Phase I:**
$12,185.54	**$4,193.00**	**$9,100.00**
RTC Potential Savings:		
Avg. Group Fitness Class Cost $35.00/ea x 2d/wk x 6wks	**$420.00** per house per week	**$5,040.00** 2 houses (20 ea) x 6wks
Incurred SUD Cost & Stats		**Total Cost:**
Avg. U.S. persons w/ SUD		**20,000,000**
Avg. annual cost to the U.S.		**$740,000,000,000.00**
Avg. annual cost per American $740 billion by 328.2 million		**$2,254.72**
Avg. RTC cost per person $1000/d x 30d		**$30,000.00**

*GREEN indicates actual or potential cost savings to RTC.