

College programming for students in addiction recovery: A PRISMA-guided scoping review

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Abstract

The health and well-being of students in recovery from substance use disorder is increasingly being recognized as a priority on college campuses. This scoping review maps the state of the existing literature evaluating collegiate recovery programming to highlight research gaps and inform policy. We conducted a systematic search of articles related to collegiate recovery programming published before August 2020. The 15 extracted study characteristics included publication type, study design, primary outcomes, reporting of behavioral addictions and mutual-help groups, sample demographic information, school size, ownership, and funding source. The PRISMA-guided search strategy identified 357 articles for abstract review; of 113 articles retained for full-text review, 54 studies were identified for final inclusion. Primary outcomes were coded into four domains: clinical, lived experience, program characterization, and stigma. All but one of the articles were observational (57%) or qualitative (41%) research designs. Government or foundation grants funded only 11% of the studies. Findings suggest that collegiate recovery programs reduce risk of relapse, improve educational outcomes, and provide social support for students in recovery. The domains identified offer a framework for healthcare providers, college administrators, and researchers to understand and improve programs, thereby better serving this marginalized student group.

Introduction

University students from marginalized populations are at risk of poor educational and health outcomes. Though some of these groups (e.g., LGBTQ) have been the focus of numerous college-based programming efforts and interventions, another disadvantaged and sizeable student group – college students in recovery for a substance use disorder (SUD) – has only recently begun to gain attention on campuses. There are an estimated 600,000 college students in recovery from an illicit drug and/or alcohol use disorder (ACHA-NCHA II, 2019; National Center for Education Statistics, 2017; Substance Abuse and Mental Health Services Administration, 2019). Colleges and universities are beginning to discover the increased benefits of providing support services and improving health and educational outcomes among this student population (Reed, Almaguer-botero, Grizzell, & Watts, 2020).

College student substance use has long been identified as a strong indicator of adverse educational and public health outcomes (Musgrave-Marquart, Bromley, & Dalley, 1997; Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). College students in recovery from SUD typically encounter a cultural milieu of excessive drug and alcohol consumption in which choosing between sustaining a program of recovery and a degree in higher education can be a dangerous, and sometimes life threatening, decision. To support students maintaining or beginning SUD recovery, a burgeoning number of US educational institutions have established collegiate recovery programs (CRPs). Brown University founded the first CRP in 1977 (White & Finch, 2006). Soon after, Rutgers University, Texas Tech University, and Augsburg University initiated their own CRPs which included a mix of institutional programming, housing support, and clinical services for college students in SUD recovery (Botzet, Winters, & Fahnhorst, 2008; Cleveland, Harris, Baker, Herbert, & Dean, 2007; Laitman & Lederman, 2008). A more

recent burst in CRP programming coincided with the 2005 release of a Texas Tech University/SAMHSA-authored guide designed to help students, college health workers, college administrators, and other professionals initiate programs across the US (Harris, Kimball, Casiraghi, & Maison, 2014). Today there are 138 CRPs in 40 states, each with its own unique programming and recovery community. CRPs exist at 4-year public and private institutions, and serve both undergraduate and graduate students (Laudet, Harris, Kimball, Winters, & Moberg, 2015). Generally, CRPs create a recovery-friendly environment on college campuses through peer support, on-campus mutual-help meetings, recovery/sober housing, alcohol/drug-free events, counseling staff, and dedicated student drop-in centers (Bugbee, Caldeira, Soong, Vincent, & Arria, 2016). By offering these services combined with a community supportive of recovery, CRPs may reduce risk for relapse, and reinforce and enhance remission rates and recovery. Notably, though SUD treatment facilities for college students address clinical symptomatology specifically, CRPs may be uniquely situated to address other recovery-related deficits including resources for social support, spirituality, and mutual-help affiliation, collectively referred to as *recovery capital* (Laudet & White, 2008; Terrion, 2013; Vilsaint et al., 2017).

CRPs are built on three critical insights: the need for continuing care of SUDs, the importance of recovery-oriented systems of care (ROSC), and the value of peer-recovery support services. Continuing care refers to the recovery stage of healing and may include individual check-ups as well as mutual-help meetings and involvement in drug-free social events (Laitman, Kachur-Karavites, & Stewart, 2014). ROSCs are a framework for coordinating multiple systems, services and supports that are person-centered and designed to readily adjust to meet the individual's needs and chosen pathway to recovery (Kaplan, 2008). ROSCs and health care professionals are increasingly emphasizing expanded peer support for individuals with SUD (Tracy & Wallace, 2016). CRPs are one venue where peer support services are being implemented, via both peer recovery coaching and recovery housing support services (Laudet & Humphreys, 2013).

Importance of examining collegiate recovery programming

The rapidly growing and novel recovery resource of CRPs has attracted surprisingly little research interest, despite intense national concern about substance use on college campuses. Examining health and related outcomes for students in recovery is important for at least three reasons. First, university health providers, and their host institutions of higher education, have an obligation to care for all students under their provision, including historically underserved and marginalized student populations. University administrators and research faculty may take a page from other historically marginalized groups (e.g., women, people living with a disability, LGBTQI, and people of color) and create research initiatives that aim to seek out and train scholars with lived experience of SUD. Second, embracing students in recovery on campus works to normalize substance-free lifestyles, and as a result, universities will be safer and save costs related to excessive drinking on campus. Lastly, understanding the unique health needs of students in recovery will allow colleges and universities to design interventions and programming that will be responsive to the healthcare and educational needs of this student group.

Prior reviews on CRPs

Though there are previous descriptive reviews on collegiate recovery programming (e.g., Bugbee et al., 2016; Depue & Hagedorn, 2015; Laudet, Harris, Kimball, Winters, & Moberg, 2014), this is the first study to provide a comprehensive scoping review. As noted in Arksey and O'Malley (2005), scoping reviews are distinguishable due to their comprehensiveness and attendant ability to identify gaps in the literature and to inform policy. Scoping reviews provide a "lay of the land" of the research in an area of study without assessing research quality. Conversely, systematic reviews provide a specific answer to a research question from a narrow range of quality-assessed studies. Early CRP reviews have focused primarily on post-SUD treatment considerations (Morgan & Cavendish, 1988) and the recovery school movement (White & Finch, 2006). More recent literature reviews have focused on how CRPs fit into the recovery-oriented system of care model (Bugbee et al., 2016; Harris, Baker, Kimball, & Shumway, 2008; Laudet, Harris, Kimball, Winters, & Moberg, 2014) and how CRPs help students succeed (Brown, Ashford, Heller, Whitney, & Kimball, 2018; Reed et al., 2020). However, none of these reviews was systematic. The two systematic reviews completed did not report any quantitative findings related to CRPs (Ashford, Brown, Eisenhart, Thompson-Heller, & Curtis, 2018; Hennessey & Finch, 2018). One was a combined report on recovery schools (high school and college) and though some controlled trials had been conducted and reported on for recovery high schools, no outcomes from controlled trials were found for CRPs (Hennessey & Finch, 2018). A second review paper reported major CRP themes identified from a meta-synthesis of qualitative findings (Ashford, Brown, Eisenhart, et al., 2018).

Aims

Following Arksey and O'Malley (2005), the purposes of this review were to identify the initial research question, search for relevant studies, select studies, chart the data, and collate, summarize and report the studies utilized in the review. Lastly, the review aimed to identify gaps in the research to be addressed in future investigations. The findings will be important for guiding policy and practice as they relate to college students in recovery at institutions of higher education. The reviewed literature will serve as a resource for CRP directors, college healthcare providers, college administrators, researchers, and other professionals who work with students in SUD recovery.

Methods

Data Sources and Searches

In adherence to guidelines for scoping reviews (Peters et al., 2015) and Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) procedures (Moher, Liberati, Tetzlaff, & Altman, 2009), we developed a searching scheme to identify articles related to collegiate recovery programming. Three online databases were searched – PsycInfo, PubMed, and Web of Science—using search terms including *substance use, college, student, and recovery* (See Appendix A for full list of search strings) on July 8, 2020. Restrictions were not imposed based on dates, languages, or article types. To identify any further articles not located through these databases, we manually searched through relevant references,

contacted experts in the field, and set up alerts on Google Scholar to notify us when any relevant new research was made available, concluding the search on August 14, 2020.

Study Selection

Figure 1 outlines the process of article selection utilizing the PRISMA guidelines (Moher et al., 2009). We excluded studies that did not focus on college students in recovery and studies that did not generate any definitive statistical results regarding collegiate recovery programs or college students in recovery from substance use disorder. Also excluded were several article types: systematic reviews, literature reviews, and book reviews. Case reports and case studies were generally excluded with the exception of one study with rigorous experimental design and comprehensive results. One study written in Spanish that examined post-treatment college students in Mexico was excluded because it did not focus on recovery specifically (not because it was written in Spanish). Finally, we examined all studies for the potential of duplicate results and eliminated any articles reporting findings on the same data. Publicly available theses and dissertations were included but other unpublished works were not considered.

After any duplicate articles were removed, two researchers (NV, MR) independently reviewed all abstracts against the eligibility criteria. To be included, the abstract had to be (a) recovery-oriented (i.e., programming or services related to substance use disorder recovery), and (b) focused on college students. Any dispute was resolved through discussion. Full-text articles were then obtained for all included abstracts and subsequently independently reviewed by two researchers (NV, MR). Only articles that focused on college students in recovery, or recovery programming on college campuses, and reported thorough quantitative or qualitative results were included. Again, any disagreements were resolved through discussion between the researchers, and if agreement could not be attained, the senior author (KH) was brought in for resolution.

Data Extraction

For each study that was ultimately selected for final full-text inclusion, two researchers (NV & MR) independently extracted 15 study characteristics. Characteristics were initially based on those used in previous studies (e.g., study design, participants' gender) and added to and refined (e.g., participants' sexual orientation and behavioral addictions) using the iterative model presented in Arksey and O'Malley (2005). The final characteristics were (1) publication type (i.e., journal article, theses/dissertation, book chapter, case study), (2) study design, (3) statistical approach, (4) IRB approval, (5) participant category (i.e., college student, college administrator, CRP Alumni, CRP director), (6) number of participants, (7) primary outcomes, (8) reporting of behavioral addictions, (9) reporting of mutual-help groups, (10-12) reporting of gender, race, and sexual orientation, (13) school size, (14) public or private school, and (15) study funding source.

Data Synthesis and Analysis

The scoping review summarized and categorized articles across these 15 characteristics. It provides an overview of the literature without evaluation of article bias or research rigor.

Results

The initial search revealed 357 articles for abstract review, of which 244 were excluded after examination (Figure 1). After separately reviewing the full-texts of the remaining 113 articles, NV and MR collectively identified 54 studies for final inclusion and excluded 59. A list of the articles excluded and the reason for exclusion are provided in Appendix B. Table 1 offers a detailed summary of study characteristics.

During the iterative review process, we found primary outcomes fell into four major domains: clinical, lived experience (students in recovery answered open-ended questions regarding their experiences), program characterization, and stigma. All of the included articles are listed in Table 2 and summarized by CRP outcome domain/ category and study design. The majority of studies examined clinical outcomes and lived experiences of college students in recovery. Most were journal articles (32/54, 59%) or dissertations/theses (17/54, 31%), with four book chapters and one case study. There were 12 studies published prior to 2010, 11 studies published from 2010 to 2015, and 31 studies published after 2015. Only one study was conducted outside the United States.

Study designs

The majority of studies used an observational design (31/54, 57%), including 17 cross-sectional, 9 prospective cohort, and 5 “other” observational designs. The remaining studies used a qualitative design (22/54, 41%), including 15 semi-structured interview, 3 focus group, and 3 “other” qualitative designs. The scoping review identified just one randomized controlled trial. We highlight some of the study designs in the explanation of primary outcomes below.

Funding source

A large number of studies either did not report funding (32/54, 59%) or were unfunded (7/54, 13%). When reported, funding was most often obtained from internal university funding sources (5/54, 9%) and philanthropic sources (4/54, 7%). Few studies reported government funding sources (6/54, 11%^[1]), with two from the National Institute on Drug Abuse (NIDA - though these were from the same grant), one from the National Institute on Alcohol Abuse and Alcoholism (NIAAA), one from the Substance Abuse and Mental Health Services Administration (SAMHSA), and two studies that reported “other government” funding sources.

Primary outcome domain

Lived experience

Lived experience refers to studies in which students answered open-ended questions about their recovery experiences. Studies with the outcome of lived experience that were qualitative designs and coded information collected in semi-structured interviews to identify themes reported among CRP students were very common (16/54, 30%) in the review (Bell et al., 2009; Iarussi, 2018; Kollath-Cattano et al., 2018; Terrion, 2013; Walker, 2017; Whitney, 2018; Woodford, 2001; Workman, 2020). Other studies of lived experience investigated CRP alumni (Lovett, 2015), recovery discourses (Whitney, 2018), what made student recovery possible (Washburn, 2016), why students joined a CRP (Harris et al., 2014; Laudet, Harris, Kimball, Winters, & Moberg, 2016), and the role of recovery identities among CRP members (Hoffman, 2020). A qualitative study using focus groups identified needs specific to students in recovery on campus (Worfler, 2016).

Clinical

Studies were coded as clinical (19/54, 35%) if the primary outcome was determined to be part of the six American Society of Addiction Medicine criteria, which include withdrawal potential, biomedical conditions, mental health, readiness to change, relapse/continued use, and recovery environment (Rastegar & Fingerhood, 2015). As would be expected, a large portion (8/21, 38%) of studies examining clinical outcomes looked specifically at substance use or abstinence. The majority of these studies were cross-sectional observational research designs. Most examined current college students in recovery, though one study examined CRP alumni (Brown et al., 2019). Other clinical outcomes included cravings (Eddie, Conway, Alayan, Buckman, & Bates, 2018; Wiebe, Griffin, Zheng, Harris, & Cleveland, 2018; Zheng, Wiebe, Cleveland, Molenaar, & Harris, 2013), recovery-related social support (Smith et al., 2018), disordered eating (Ashford, Wheeler, & Brown, 2019), and multiple medical/mental health conditions (Shumway, Bradshaw, Harris, & Baker, 2013; Watts, Tu, & O'Sullivan, 2019).

Non-clinical student outcomes

Some of the studies' primary outcomes were non-clinical in nature (6/54, 11%). These included academic performance (Moore, 1999), vocational expectations (Watts, Tu, et al., 2019), nutrition education (Wattick, Hagedorn, & Olfert, 2019), and reductions in stigma (Beeson et al., 2019; Gueci, 2018b). There were five qualitative study designs and one quantitative design in the non-clinical domain.

Program characterization

About a quarter of the studies (13/54, 24%) examined the general characteristics of CRPs. Although some aimed to demonstrate the importance of the CRP as an essential resource on campus (Carlson, 2018; Watts, Chowdhury, & Holloway, 2019), others aimed to provide basic and program-specific information (Ashford, Brown, & Curtis, 2018; Beeson, Whitney, & Peterson, 2017; Gueci, 2018a). Study designs were a mix of qualitative and observational designs.

[1] Note that percentages may not add to 100% due to rounding error.

Discussion

This scoping review summarizes the research literature regarding college student substance use disorder recovery related programming. Nearly all of the studies to date have used either observational or qualitative research designs. Like many other emergent literatures, randomized clinical trials generating efficacy estimates are rare in the CRP literature. Sample sizes were generally small. Nearly one-quarter of the studies did not report IRB approval, though some of these may have had such approval. Extramural funding was scarce among CRP investigations with only 11% reporting investment from a National Institute of Health funding organization, foundations, or other government funders. The lack of international studies on programming relating to university students in recovery suggests that CRPs may not exist in other countries outside the US, although it could also mean that CRPs have not attracted interest from researchers in other countries.

Evidence regarding CRPs

Though there may be evidence regarding the core elements of recovery programming in research on adult populations, how those elements operate specifically among college students has not been effectively evaluated. Hence, it may be presumed that a blending of evidence-based interventions including recovery housing (Jason & Ferrari, 2010), peer recovery supports (Laudet & Humphreys, 2013), continuing care treatment programming (McKay, 2009), and mutual-help group (Kelly, Humphreys, & Ferri, 2020) facilitation are driving the effectiveness and growth of CRPs. Until additional controlled trials are completed, we cannot draw conclusions that are certain. There may be great difficulty in conducting randomized controlled trials (RCTs) in this population, as the multi-component nature of CRPs does not lend itself to a comprehensive RCT design. Likewise, an important facet of CRPs is that they attract current students interested in recovery as well as individuals in sustained recovery back to college to begin or finish a degree who may not otherwise attend due to risk of relapse in an abstinence-hostile environment. Hence, this potentially confounding developmental difference in students should be accounted for in studies. Additionally, self-selection bias (e.g., those more motivated to change also may be motivated to engage in CRP) may cast doubt on CRP studies shown to improve student outcomes. This limitation has been overcome in adult studies on Alcoholics Anonymous (Humphreys, Blodgett, & Wagner, 2014), and perhaps could also be handled in CRP research; for example, through studies that randomize arriving students to receive or not receive a tailored welcoming intervention to a CRP. Future studies could also exploit the exogeneity in availability (e.g., schools with and without CRPs) or using propensity score matching to evaluate CRP effectiveness while addressing the risk of selection bias.

Though CRP research is still in its infancy, some observational evidence suggests that programming for college students in recovery may be successful in helping students and CRP alumni to sustain abstinence (Bennett, McCrady, Keller, & Paulus, 1996; Botzet et al., 2008; Brown et al., 2019; Cleveland et al., 2007; Laudet et al., 2015). Likewise, increased GPA, retention in school, and graduation rates among students in recovery, compared to same school general population students, offer some moderate evidence of CRP efficacy in educational attainment (Ashford, Brown, & Curtis, 2018; Botzet et

al., 2008; Moore, 1999; Watts, Tu, et al., 2019). Lastly, sobriety related social support was associated with reduced drug and alcohol-related cravings among CRP students (Cleveland & Harris, 2010a, 2010b; Wiebe et al., 2018; Zheng et al., 2013). Though more research is needed to explore these observational findings, results may have implications for college administrators and researchers. For example, integrating interventions aimed at increasing social support for non-drinking lifestyles (e.g., sober tailgates and substance-free social outings) among students both in recovery and not in recovery has the potential to create a safer campus environment for all students.

Mutual-help group participation was recorded in only 37% of the studies. Because mutual-help has been shown to be effective among the general population (Kelly et al., 2020) and emerging adults (Kelly, Stout, & Slaymaker, 2013), the limited research on this data point suggests that mutual-help participation should be prioritized and collected with basic demographic information in future CRP studies. Similarly, behavioral addictions (i.e., gaming/internet, sex, food, gambling) were recorded in only 11/54 studies despite the high co-morbidity of behavioral addictions and SUDs (Cohen et al., 2010; Laudet et al., 2015), and the recent focus of examining these conditions in combination among CRP students (Ashford et al., 2019; Monsour, Kimball, & Hensley, 2020). Future research should aim to record information on behavioral addictions among all CRP students.

Qualitative research

Qualitative research is abundant in the CRP literature. Some of the common themes reported among these studies include the importance of on-campus mutual help meetings (Whitney, 2018), the role of the student-drop-in center (Ashford, Brown, Eisenhart, et al., 2018), and the role of community and social support among CRP students (Harris et al., 2014). Likewise, other qualitative investigations looked at themes related to the importance of CRP seminars and addiction education programming (Bell et al., 2009; Casiraghi & Mulsow, 2010), managing emotions (Lovett, 2015), academic success (Terrion, 2013), enhancing overall wellness (Iarussi, 2018), and recovery housing and diversity in CRP programs (Woodford, 2001). These findings should act as a springboard for new quantitative research projects examining these common topics in detail.

Stigma

Research on stigma surrounding substance use disorder as it relates to college students was the focus of some articles in the CRP literature. The findings indicated that CRP-related “recovery ally” trainings reduced stigma and improved self-reported ally related behaviors (i.e., use inclusive language, make others aware of CRP) for individuals completing the training (Beeson et al., 2019). These trainings have also been shown to increase empathy for students in recovery among student allies (Gueci, 2018a). A final stigma related study used a unique methodology incorporating photographs to capture common themes to identify sources and consequences of stigma among students in a CRP (Spencer, 2017). Sources of stigma included discrimination and expectation of rejection while consequences of stigma included loneliness, isolation, and fear of missing out. Future studies should not only examine the personal experiences of stigma, but also the overall level of stigma toward individuals with substance

use disorder among all students at schools with and without CRPs. These findings on school level stigma may provide policy recommendations for school administrators and lawmakers contemplating CRP implementation at the university and state level.

Knowledge gaps and informing policy, practice, and research

As expected, this scoping review identified numerous gaps in the literature regarding programming and services related to college students in recovery from substance use disorder. Major gaps included a lack of 1) controlled trials, 2) mobilizers and mechanisms of behavior change (i.e., what components of CRPs lead to better outcomes and how specifically they achieve those better outcomes), and 3) implementation science research designs. Other important gaps in the literature included a lack of research on sociodemographic differences among students in CRPs, racial disparities among students in CRPs, and community college programming. Simply understanding how many CRP programs are currently operating and basic information on programming would be a huge step forward for research in this area. Though we did not implement a data point for studies examining CRP participants' with co-occurring conditions and criminal justice involvement, it should be noted that gaps were apparent on studies in these areas. Additionally, conceptual models were seldom applied to inform research design, and data collection. Taken together, these gaps provide researchers with important next-steps in this area of inquiry.

Controlled trials and implementation science studies

As noted, there has only been one randomized controlled trial including CRP students to date. However, it is important to note that this study did not randomize on CRP participation; rather all study participants were CRP students and were randomized into a bio-feedback control and treatment condition to evaluate levels of craving (Eddie et al., 2018). This highlights the most glaring deficit in the CRP literature: lack of funded (R01, R03, or R21 NIH funding mechanisms) controlled or matching trials severely limits the evaluation of CRP effectiveness and necessitates the urgency of research in this area. The only NIH funded study aimed specifically at college students in recovery is now more than 7 years old and was not a controlled trial (Laudet et al., 2015, 2016; Laudet, Harris, Winters, Moberg, & Kimball, 2014; Laudet et al., 2014). Without controlled trials and funded research, evidence-based practices and standards for CRPs cannot be ascertained. In order to suggest elements of CRPs contain interventions and practices that are evidence-based, the NIH and other funding sources must prioritize the understanding of the recovery phase of substance use disorder among college students.

Implementation science is the study of methods to promote the systematic uptake of research findings and other evidence-based practices and also to use these findings to enhance routine practice and improve the quality and effectiveness of health services (Eccles & Mittman, 2006). Colleges represent a unique context in which to conduct implementation research due to their differing models of leadership, school year calendar, and student culture, and the diversity of students and staff (Owens et al., 2014). Likewise, colleges themselves may be influenced by the local community, powerful alumni, the U.S. Department of Education, and funding at state and federal levels (Clotfelter, 2003; Jongbloed &

Vossensteyn, 2016). Unfortunately, these contexts through which universities operate often do not work in harmony to support implementation of SUD recovery programming (Harris et al., 2014). The first step of determining the implementation strategy for CRPs is identifying a framework to guide data collection, analyses, and interpretation such that contextual factors can be identified and studied. Hence, implementation science investigations are needed to identify barriers and facilitators to CRP implementation using well-validated frameworks (i.e., Consolidated Framework for Implementation Research [CFIR] or Reach Effectiveness Adoption Implementation Maintenance [RE-AIM]).

Sociodemographic differences, racial disparities, and gender differences

This scoping review exposed a severe lack of research on underserved student groups and highlights the need to know more about CRP students of color, women students, and low-income and first-generation students. We found no articles examining differences between socio-economic groups, though one study reported that a third of students had experienced homelessness in their lifetime (Laudet et al., 2015). Although three-quarters of the studies reported CRP participants' racial/ethnic background, 25% of the studies did not. None of the studies examined racial disparities or racial differences on any outcomes among college students in recovery. Only one study focused specifically on women (Walker, 2017) and one examined sex differences (Smith et al., 2018). Though most studies 63% reported gender, 37% of the studies did not, and only two studies reported transgender/non-binary students (Carlson, 2018; Watts, Tu, et al., 2019). Likewise, only three studies reported student sexual orientation (Ashford, Brown, & Curtis, 2018; Ashford et al., 2019; Watts, Tu, et al., 2019). To inform college healthcare providers and policy, research is needed on these underrepresented students in terms of their use and outcomes of CRP participation. These findings would provide guidance on the unique programming needs and inform tailored interventions programs for these underserved student populations.

Co-occurring conditions and criminal justice involvement

Though the evidence is preliminary, it appears that co-occurring conditions (mental health disorders and SUDs) are the norm among CRP participants. In connection with the findings presented on behavioral addictions, multiple studies have documented a relationship between SUD and eating disorders (Ashford et al., 2019; Laudet et al., 2015), SUD and other mental health conditions (Ashford, Brown, & Curtis, 2018; Laudet et al., 2015; Odefemi-Azzan, 2020), and poly-substance use disorders (more than one reported SUD - Cleveland et al., 2007; Laudet et al., 2015). How these conditions confound CRP involvement or influence recovery-related outcomes will be vital for future research.

Interestingly, there were two reports showing a high level of previous criminal justice involvement (58%-66%) among CRP members (Cleveland et al., 2007; Laudet et al., 2015). These findings have implications for both CRP and criminal justice system researchers. First, among CRP researchers, investigations into internal processes among students leading to engagement in CRPs and desistance from the criminal justice system are warranted. Second, among criminologists and economists, research evaluating the cost savings associated with desistance from the criminal justice system among these

students deserves immediate attention in the literature. Relatedly, research examining the effectiveness of reallocation of resources from the criminal justice system into CRPs should be prioritized.

Conceptual models

Though not collected as a data point, a small number of studies implemented a conceptual model to guide findings. One such study included an effort to create a conceptual model using a systems-based community approach (Harris et al., 2008) and another incorporated the continuum of care model to treat addiction (Laitman et al., 2014; Laitman & Lederman, 2008). Others have suggested an integrated behavioral health model to treat all co-occurring mental health disorders along with SUD in CRPs (Ashford, Brown, & Curtis, 2018). One study suggested a recovery model specifically for community colleges (DiRosa & Scoles, 2020). Lastly, one study aimed to understand CRPs using a socio-economic model which categorizes CRPs into outcomes at the individual, interpersonal, organizational, and community levels (Beeson et al., 2017). Unfortunately, none of these models conceptualizes CRP programming in a comprehensive manner. Because CRPs can draw from research in different disciplines, including criminal justice, public health, education, and each is interested in their own models and preferred outcomes (i.e., recidivism, relapse, retention), this research gap is profound. Future research should prioritize creating a socioecological model of CRP outcomes to fill this gap.

Limitations

This review needs to be understood in light of limitations inherent in the study design. We did not review the quality of the studies included or investigate the research methods for potential bias; thus, we are limited in the conclusions we can draw. However, this limitation is standard to scoping reviews. This review was also limited by the amount of research available and the focus on largely public university samples in North America.

Conclusions

This scoping review was intended to give a current “lay of the land” as it relates to research on collegiate recovery programming. The studies included in the review are intended to provide an expansive overview of the literature and add to the general understanding of students in recovery from SUD. The review identified gaps in the research on programming for students in SUD recovery and highlighted areas for future inquiry. The available evidence on CRPs is minimal when compared to the extensive literature base on prevention and reduction of substance use on college campuses. Given such a disparity and the growing need for recovery-oriented services on college campuses, evaluations of CRP effectiveness are needed. The domains identified in this review offer a potential framework for healthcare providers and researchers, and will help to inform policy and practice to improve outcomes for this marginalized student group.

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Declarations

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Highlights:

- A scoping review of collegiate recovery programming in the U.S.
- The review identified four sub-groups of relevant primary outcomes
- Across studies, programs improved relapse, educational, and social support outcomes
- Government and foundation funded research was infrequent in the literature
- Research is needed, particularly prospective cohort and matching trials

Contributors:

Noel Vest designed the study, conducted the literature search, coded study characteristics, conducted the statistical analyses, and contributed to a majority of the manuscript writing. Meg Reinstra aided in formulating the search terms, conducted the literature search, coded study characteristics, created the PRISMA chart, and wrote the first draft of the methods. Christine Timko helped formulate the search strategy and edited the manuscript. John Kelly provided edits to the final draft of the manuscript. Keith Humphreys was the senior author and provided guidance, feedback, and manuscript edits throughout the project. All authors contributed to and have approved the final manuscript.

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Abbreviations

CRP = collegiate recovery program; SUD = substance use disorder; ROSC = recovery oriented systems of care; PRISMA = Preferred Reporting of Items for Systematic Reviews and Meta-Analyses

Tables

Table 1 Description of included studies	
Study Variable	Number of Studies (%)
<u>Study Participants</u>	
College students	40 (74%)
College Administrators	2 (4%)
CRP Alumni	3 (5%)
CRP Directors	1 (2%)
CRP Costs	1 (2%)
Multiple Participant Groups	7 (13%)
<u>Characteristics of College Student Studies (n=40).</u>	
Sample Sizes	
< 10 students	7 (18%)
10-25 students	9 (23%)
26-100 students	17 (42%)
101-500 students	6 (15%)
> 500 students	1 (2%)
Basic Demographics	
Gender Reported	34 (63%)
Race/Ethnicity Reported	30 (75%)
Sexual Orientation Reported	3 (8%)
<u>Protection of Human Subjects Reporting</u>	
Study Reported IRB Approval	39 (72%)
IRB Approval Not Reported	13 (24%)
IRB Exemption Reported	2 (4%)
<u>Research Settings</u>	
University Size	
Large (10,000+)	21 (39%)
Medium (2,000 to 10,000)	9 (16%)

Small (less than 2,000)	2 (4%)
Community College	1 (2%)
Not applicable or Not Reported	21 (39%)
<u>University Type</u>	
Public	30 (55%)
Private	2 (4%)
Not Applicable or Not Reported	22 (41%)
<u>Mutual-help Participation Reported</u>	
Yes	20 (37%)
Not Applicable or Not Reported	34 (63%)
<u>Behavioral Addictions Reported</u>	
Eating	6 (10%)
Gambling	2 (4%)
Other (Including Internet/Gaming)	3 (6%)
Not Applicable or Not Reported	43 (80%)

Table 2 Recovery programming primary outcome domains/categories and research design.	
Lived Experience – 15 studies	Research/Study Design
Common Themes Identified	
Bell et al. (2009)	Qualitative semi-structured interview
Hoffman (2020)	Qualitative semi-structured interview
Kimball et al. (2017)	Qualitative semi-structured interview
Kollath-Cattano et al. (2018)	Qualitative semi-structured interview
Iarussi (2018)	Qualitative semi-structured interview
Lovett (2015)	Qualitative semi-structured interview
Scott et al. (2016)	Qualitative semi-structured interview
Terrion (2013)	Qualitative semi-structured interview
Walker (2017)	Qualitative semi-structured interview
Washburn (2016)	Qualitative semi-structured interview
Whitney (2018)	Qualitative semi-structured interview
Worfler (2016)	Qualitative focus group
Reasons for joining CRP	
Laudet et al. (2016)	Qualitative semi-structured interview
Harris et al. (2014)	Qualitative (other)
Other	
Woodford (2001)	Qualitative semi-structured interview
Workman (2020)	Qualitative semi-structured interview
Clinical – 19 studies	
Cravings	
Cleveland & Harris (2010)	Observational prospective cohort
Cleveland & Harris (2010a)	Observational prospective cohort
Eddie et al. (2018)	Clinical controlled trial
Wiebe et al. (2018)	Qualitative semi-structured interview
Zheng et al. (2013)	Observational prospective cohort

Substance Use/Abstinence		
	Bennett et al. (1996)	Observational prospective cohort
	Botzet et al. (2008)	Observational prospective cohort
	Brown et al. (2019)	Observational cross-sectional
	Cleveland et al. (2007)	Observational cross-sectional
	Laudet et al. (2015)	Observational cross-sectional
	Odefemi-Azzan (2020)	Observational cross-sectional
	Patterson et al. (2020)	Observational cross-sectional
	Sadowski, Long, & Jenkins (1993)	Observational cross-sectional
Multiple Mental Health/Medical Conditions		
	Shumway et al. (2013)	Observational prospective cohort
Coping		
	Wiebe, Cleveland, & Dean (2010)	Observational cross-sectional
Social Networks/Support		
	Cleveland, & Groenendyk (2010)	Observational prospective cohort
	Cleveland, Wiebe, & Wiersma (2010)	Observational cross-sectional
	Smith et al. (2018)	Observational cross-sectional
Disordered Eating		
	Ashford et al. (2019)	Observational cross-sectional
Non-Clinical Student Outcomes – 7 studies		
Stigma		
	Beeson et al. (2019)	Observational (other)
	Gueci (2018)	Observational cross-sectional
	Spencer (2017)	Qualitative (other)
Vocational Expectations		
	Watts, Tu, et al. (2019)	Observational cross-sectional
Grades		
	Moore (1999)	Observational (other)

Nutrition Education		
	Wattick et al. (2019)	Observational prospective cohort
Program Characterization – 13 studies		
General		
	Ashford, Brown, et al. (2018)	Observational cross-sectional
	Baker (2006)	Qualitative focus group
	Beeson et al. (2017)	Observational (other)
	Casiraghi & Mulsow (2010)	Observational (other)
	Dean, Dean, & Kleiner (1987)	Observational cross-sectional
	Doyle (1999)	Observational cross-sectional
	Gueci (2018)	Qualitative semi-structured interview
	Keller (1994)	Observational cross-sectional
	Shaffer et al. (2005)	Qualitative (other)
	Wattick ey al. (2020)	Qualitative semi-structured interview
Essential Resource on Campus		
	Carlson (2018)	Qualitative focus group
	Watts, Chowdhury, et al. (2019)	Qualitative (other)
Cost		
	DeMartell (2019)	Observational (other)

Figures

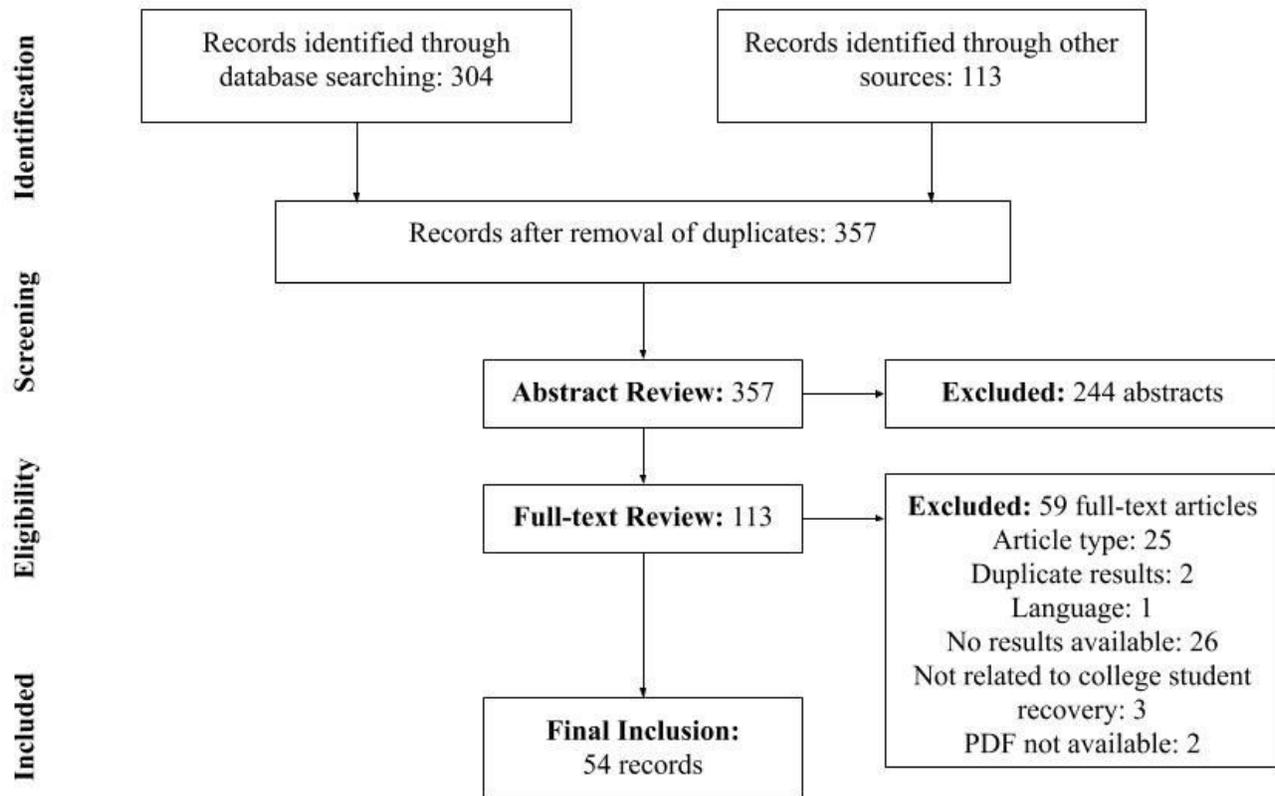


Figure 1

PRISMA flow chart.

Supplementary Files

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- [AppendixA.docx](#)
- [AppendixB.docx](#)