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# Expanding the continuum of substance use disorder treatment: Nonabstinence approaches

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## Abstract

Only a small minority of people with substance use disorders (SUDs) receive treatment. A focus on abstinence is pervasive in SUD treatment, defining success in both research and practice, and punitive measures are often imposed on those who do not abstain. Most adults with SUD do not seek treatment because they do not wish to stop using substances, though many also recognize a need for help. This narrative review considers the need for increased research attention on nonabstinence psychosocial treatment of SUD – especially drug use disorders – as a potential way to engage and retain more people in treatment, to engage people in treatment earlier, and to improve treatment effectiveness. We describe the development of nonabstinence approaches within the historical context of SUD treatment in the United States, review theoretical and empirical rationales for nonabstinence SUD treatment, and review existing models of nonabstinence psychosocial treatment for SUD among adults to identify gaps in the literature and directions for future research. Despite significant empirical support for nonabstinence alcohol interventions, there is a clear gap in research examining nonabstinence psychosocial treatment for drug use disorders. Future research must test the effectiveness of nonabstinence treatments for drug use and address barriers to implementation.

### Keywords

Harm reduction; Substance use disorder; Addiction; Psychosocial treatment

## 1. Background

Most adults with substance use disorders (SUDs) do not receive treatment in the United States (U.S.), contributing to immense individual and societal costs. Current estimates

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CP conceptualized the manuscript, conducted literature searches, synthesized the literature, and wrote the first draft of the manuscript. SD assisted with conceptualization of the review, and SD and KW both identified relevant literature for the review and provided critical review, commentary and revision. All authors contributed to and have approved the final manuscript.

Declaration of Competing Interest

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indicate that of the 20 million Americans with an SUD, only 11.8% receive treatment at a program specializing in SUD treatment (SAMHSA, 2019a). Most individuals with a current or past SUD report never utilizing treatment (Cohen, Feinn, Arias, & Kranzler, 2007; Compton, Thomas, Stinson, & Grant, 2007). For those who do receive treatment, about 30% of all psychosocial SUD treatment episodes are terminated prematurely (including all causes; Lappan, Brown, & Hendricks, 2020). Untreated SUD is associated with a host of negative individual and societal consequences, including increased healthcare costs, lost productivity, accidents, and, most notably, mortality (Gerson et al., 2001; Recovery Centers of America, 2017; Schulte & Hser, 2013). In contrast, SUD treatment is associated with numerous benefits, including decreased risk of overdose (Stewart, Gossop, & Marsden, 2002), criminal convictions (Gossop, Trakada, Stewart, & Witton, 2005), and physical and mental health problems (Gossop, Marsden, & Stewart, 2006), such that the ratio of benefits to costs for SUD treatment is estimated to be greater than 7:1 (Ettner et al., 2006). Thus, there are clear benefits to expanding access to and utilization of SUD treatment.

There are significant practical barriers to treatment access in much of the U.S. (e.g., availability of treatment, distance from treatment, cost, lack of insurance; Park-Lee, Lipari, Hedden, Kroutil, & Porter, 2017, Priester et al., 2016), but evidence suggests these barriers account for only part of the disparity between the need for and receipt of treatment. Rather, when people with SUD are surveyed about reasons they are not in treatment, not being ready to stop using substances is consistently the top reason cited, even among individuals who perceive a need for treatment (SAMHSA, 2018, 2019a). Studies aiming to increase treatment utilization among individuals with high-risk drug use have found that even when treatment is offered for free, without waitlists, and/or with professional support to reduce enrollment barriers, many individuals (between 34 and 92%) still do not enter treatment (Booth, Corsi, & Mikulich, 2003; Sibthorpe, Fleming, Tesselaar, Gould, & Nichols, 1996; Strathdee et al., 2006). Indeed, about 95% of people with SUD say they do not need SUD treatment (SAMHSA, 2019a). Even among those who do perceive a need for treatment, less than half (40%) make any effort to get it (SAMHSA, 2019a). Although reducing practical barriers to treatment is essential, evidence suggests that these barriers do not fully account for low rates of treatment utilization. Instead, the literature indicates that most people with SUD do not want or need – or are not ready for – what the current treatment system is offering.

It is essential to understand what individuals with SUD are rejecting when they say they do not need treatment. Most SUD treatment in the U. S. is characterized by the goal of abstinence from substance use (Volkow, 2020). In this model, treatment success is defined as achieving and sustaining total abstinence from alcohol and drugs, and readiness for treatment is conflated with commitment to abstinence (e.g., Harrell, Trenz, Scherer, Martins, & Latimer, 2013). Additionally, the system is punitive to those who do not achieve abstinence, as exemplified by the widespread practice of involuntary treatment discharge for those who return to use (White, Scott, Dennis, & Boyle, 2005).

Universal abstinence goals are at odds with the objectives of many individuals with SUD. Evidence suggests many individuals with SUD desire to reduce or control their substance use rather than eliminate it (e. g., up to 91% of those seeking treatment for AUD; Falk et al., 2019), and this is especially true of those with lower-severity and fewer years

of SUD (Berglund, Rauwolf, Berggren, Balldin, & Fahlke, 2019; Lozano, Stephens, & Roffman, 2006; Mowbray et al., 2013). Further, a recent project that examined outcomes considered most important to a nationally representative sample, including people who use substances, people with SUD, and people in recovery from SUD, found that abstinence was not among the prioritized outcomes. Rather, individuals with lived experience of substance use problems prioritized: staying alive, improving quality of life, reducing substance use, improving mental health, meeting basic needs, increasing self-efficacy, and increasing connections to support services (National Peer Council, 2021). Not coincidentally, those who enter treatment are more likely than non-treatment-seekers with SUD to have already experienced severe negative consequences from substance use (Kwiatkowski, Booth, & Lloyd, 2000), suggesting that it is common to wait to seek treatment until SUD-related problems have escalated. Thus, while there is a clear need to engage people earlier in SUD progression to reduce the harms caused by problematic substance use, this goal is incompatible with the predominant model of abstinence-based SUD treatment.

### 1.1. Review aims

This paper presents a narrative review of the literature and a call for increased research attention on the development of empirically supported nonabstinence treatments for SUD to engage and treat more people with SUD. We define nonabstinence treatments as those without an explicit goal of abstinence from psychoactive substance use, including treatment aimed at achieving moderation, reductions in use, and/or reductions in substance-related harms. We first provide an overview of the development of abstinence and nonabstinence approaches within the historical context of SUD treatment in the U.S., followed by an evaluation of literature underlying the theoretical and empirical rationale for nonabstinence treatment approaches. Lastly, we review existing models of nonabstinence psychosocial treatment for SUD among adults, with a special focus on interventions for drug use, to identify gaps in the literature and directions for future research. We identify a clear gap in research examining nonabstinence psychosocial treatment for drug use disorders and suggest that increased research attention on these interventions represents the logical next step for the field.

### 1.2. Methods

Papers included in this review were identified via searches for peer-reviewed publications in PsychINFO, PubMed, and Google Scholar (using key words as well as Boolean operators, truncation, and wild-cards), as well as pearl growing techniques. Searches were initially conducted between August and October 2020 and were updated in June 2021; searches were not restricted by year of publication. We conducted searches on nonabstinence SUD treatment broadly (using keyword combinations including but not limited to: (1) nonabstinence, harm reduction, risk reduction, moderation, controlled, and (2) substance use, addiction, drug, alcohol, drinking, and (3) treatment, intervention, therapy, counseling) as well as follow-up searches to identify additional literature on specific topics of interest identified in the nonabstinence treatment literature (e.g., administrative discharge).

## 2. Historical context of nonabstinence approaches

Nonabstinence approaches to SUD treatment have a complex and contentious history, and significant social and political barriers have impeded research and implementation of alternatives to abstinence-focused treatment. We summarize historical factors relevant to non-abstinence treatment development to illuminate reasons these approaches are understudied.

### 2.1. The 12-step model

The 12-Step Model of Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) has had significant influence on addiction treatment in the U.S. since the mid-20th century (Mäkelä et al., 1996). The model has roots in both the "moral" model of addiction promoted by religious temperance movements and the "disease" model of addiction proposed by scientists in the mid-20th century (Nathan, Conrad, & Skinstad, 2016). Proponents believe that addiction is a disease over which "addicts" are powerless, and that achieving recovery requires abstaining from all psychoactive substances and submitting the self to a moral higher power. The "12 Steps" to recovery borne of AA include admitting powerlessness over alcohol and being "ready to have God remove all… defects of character" (Alcoholics Anonymous, 1981). The 12-Step Model emphasizes the importance of abstinence due to the belief that addiction is an incurable disease associated with powerlessness over substance use, such that maintaining controlled use is not possible. Thus, this model is generally viewed as incompatible with nonabstinence treatment models. It is worth noting that the AA literature does not claim that all individuals with AUD have addictions; instead, it places emphasis on individuals' self-identification with the label of "alcoholic" (Alcoholics Anonymous World Services Inc., 2018). As such, even the Big Book of AA notes that controlled drinking may be possible for some who are not "alcoholics," and acknowledges that "moderate drinkers" are able to control their drinking.

AA was established in 1935 as a nonprofessional mutual aid group for people who desire abstinence from alcohol, and its 12 Steps became integrated in SUD treatment programs in the 1940s and 1950s with the emergence of the Minnesota Model of treatment (White & Kurtz, 2008). The Minnesota Model involved inpatient SUD treatment incorporating principles of AA, with a mix of professional and peer support staff (many of whom were members of AA), and a requirement that patients attend AA or NA meetings as part of their treatment (Anderson, McGovern, & DuPont, 1999; McElrath, 1997). This model both accelerated the spread of AA and NA and helped establish the abstinence-focused 12-Step program at the core of mainstream addiction treatment. By 1989, treatment center referrals accounted for 40% of new AA memberships (Mäkelä et al., 1996). In a national study of SUD treatment centers that same year, 95% of treatment center administrators reported their programs were based on AA's 12-Step model; demonstrating the wide adoption of AA's abstinence-focused approach, 90% of administrators indicated that abstinence was the *only* acceptable goal for recovery from SUD (Miller, 1994). This standard persisted in SUD treatment even as strong evidence emerged that a minority of individuals who receive 12-Step treatment achieve and maintain long-term abstinence (e.g., Project MATCH Research Group, 1998).

In addition to shaping mainstream addiction treatment, the abstinence-only 12-Step model also had an indelible effect on the field of SUD treatment research. Most scientists who studied SUD treatment believed that abstinence was the only acceptable treatment goal until at least the 1980s (Des Jarlais, 2017). Abstinence rates became the primary outcome for determining SUD treatment effectiveness (Finney, Moyer, & Swearingen, 2003; Kiluk, Fitzmaurice, Strain, & Weiss, 2019; Miller, 1994; Volkow, 2020), a standard which persisted well into the 1990s (Finney et al., 2003). Little attention was given to whether people in abstinence-focused treatments endorsed abstinence goals themselves, or whether treatment could help reduce substance use and related problems for those who did not desire (or were not ready for) abstinence.

### 2.2. Controlled drinking

In the 1970s, the pioneering work of a small number of alcohol researchers began to challenge the existing abstinence-based paradigm in AUD treatment research. In 1973, alcohol researchers Sobell and Sobell published the first of several studies examining behavioral treatment for inpatients with AUD aimed at “controlled” drinking (defined as days during which 6 oz. or less of 86-proof liquor or its equivalent were consumed, or any isolated 1- or 2-day sequence when between 7 and 9 oz. were consumed). They found that their controlled drinking intervention produced significantly better outcomes compared to usual treatment, and that about a quarter of the individuals in this condition maintained controlled drinking for one year post treatment (Sobell & Sobell, 1973).

The results of the Sobell’s studies challenged the prevailing understanding of abstinence as the only acceptable outcome for SUD treatment and raised a number of conceptual and methodological issues (e.g., the Sobell’s liberal definition of controlled drinking; see McCrady, 1985). A “controlled drinking controversy” followed, in which the Sobells as well as those who supported them were publicly criticized due to their claims about controlled drinking, and the validity of their research called into question (Blume, 2012; Pendery, Maltzman, & West, 1982). Marlatt, whose experimental research around the same time was challenging notions of total loss of control among problematic drinkers (Marlatt, Demming, & Reid, 1973), was one of few researchers who vocally supported the Sobells (who were eventually exonerated of scientific wrongdoing by two independent, external investigations; Blume, 2012; Sobell & Sobell, 1984). Despite the intense controversy, the Sobell’s high-profile research paved the way for additional studies of nonabstinence treatment for AUD in the 1980s and later (Blume, 2012; Sobell & Sobell, 1995). Marlatt, in particular, became well known for developing nonabstinence treatments, such as BASICS for college drinking (Marlatt et al., 1998) and Relapse Prevention (Marlatt & Gordon, 1985). Like the Sobells, Marlatt showed that reductions in drinking and harm were achievable in nonabstinence treatments (Marlatt & Witkiewitz, 2002).

### 2.3. The harm reduction movement

In the 1980s and 1990s, the HIV/AIDS epidemic prompted recognition of the role of drug use in disease transmission, generating new urgency around the adoption of a public health-focused approach to researching and treating drug use problems (Sobell & Sobell, 1995). The realization that HIV had been spreading widely among people who injected drugs in the

mid-1980s led to the first syringe services programs (SSPs) in the U.S. (Des Jarlais, 2017). These programs were met with significant political and social resistance. Early attempts to establish pilot SSPs were met with public outcry and were blocked by politicians (Anderson, 1991). In 1988 legislation was passed prohibiting the use of federal funds to support syringe access, a policy which remained in effect until 2015 even as numerous studies demonstrated the effectiveness of SSPs in reducing disease transmission (Showalter, 2018; Vlahov et al., 2001). Despite these obstacles, SSPs and their advocates grew into a national and international harm reduction movement (Des Jarlais, 2017; Friedman, Southwell, Bueno, & Paone, 2001). The movement promoted a harm reduction philosophy emphasizing the rights and autonomy of people who use drugs through a social justice lens, and advocated for policies and interventions (e.g., syringe access, overdose prevention and response, supervised injection facilities) which reduce substance-related harms without expecting abstinence (Denis-Lalonde, Lind, & Estefan, 2019; Ritter & Cameron, 2006).

The harm reduction movement, and the wider shift toward addressing public health impacts of drug use, had both specific and diffuse effects on SUD treatment research. In 1990, Marlatt was introduced to the philosophy of harm reduction during a trip to the Netherlands (Marlatt, 1998). He adopted the language and framework of harm reduction in his own research, and in 1998 published a seminal book on harm reduction strategies for a range of substances and behaviors (Marlatt, 1998). Marlatt's work inspired the development of multiple nonabstinence treatment models, including harm reduction psychotherapy (Blume, 2012; Denning, 2000; Tatarsky, 2002). Additionally, while early studies of SUD treatment used abstinence as the single measure of treatment effectiveness, by the late 1980s and early 1990s researchers were increasingly incorporating psychosocial, health, and quality of life measures (Miller, 1994).

The past 20 years has seen growing acceptance of harm reduction, evidenced in U.S. public health policy as well as SUD treatment research. Thirty-two states now have legally authorized SSPs, a number which has doubled since 2014 (Fernández-Viña et al., 2020). Regarding SUD treatment, there has been a significant increase in availability of medication for opioid use disorder, especially buprenorphine, over the past two decades (opioid agonist therapies including buprenorphine are often placed under the "umbrella" of harm reduction treatments; Alderks, 2013). Nonabstinence goals have become more widely accepted in SUD treatment in much of Europe, and evidence suggests that acceptance of controlled drinking has increased among U.S. treatment providers since the 1980s and 1990s (Rosenberg, Grant, & Davis, 2020). Importantly, there has also been increasing acceptance of non-abstinence outcomes as a metric for assessing treatment effectiveness in SUD research, even at the highest levels of scientific leadership (Volkow, 2020). Many advocates of harm reduction believe the SUD treatment field is at a turning point in acceptance of nonabstinence approaches. Indeed, a prominent harm reduction psychotherapist and researcher, Rothschild, argues that the harm reduction approach represents a "third wave of addiction treatment" which follows, and is replacing, the moral and disease models (Rothschild, 2015a).

### 2.4. Current status of nonabstinence SUD treatment

Despite the growth of the harm reduction movement globally, research and implementation of nonabstinence treatment in the U.S. has lagged. Most U.S. treatment providers still utilize abstinence-focused approaches such as 12 Step Facilitation and AA/NA groups as a mandatory aspect of treatment (SAMHSA, 2017), and while providers demonstrate growing acceptance of controlled drinking, acceptance of nonabstinence outcomes for drug use remains very low (Rosenberg et al., 2020). Furthermore, abstinence remains a gold standard treatment outcome in pharmacotherapy research for drug use disorders, even after numerous calls for alternative metrics of success (Volkow, 2020). Models of nonabstinence psychosocial treatment for drug use have been developed and promoted by practitioners, but little empirical research has tested their effectiveness. This resistance to nonabstinence treatment persists despite strong theoretical and empirical arguments in favor of harm reduction approaches.

## 3. Theoretical and empirical rationale for nonabstinence treatment

### 3.1. Nonabstinence goals among people with SUD

Research suggests that a substantial portion of individuals with SUD have nonabstinence goals. These goals may include achieving moderation (definitions vary, but generally reflect low-risk use with few or no negative consequences), reductions in use, and/or decreasing problems associated with substance use (i.e., harm reduction).

There has been little research on the goals of *non*-treatment-seeking individuals; however, research suggests that nonabstinence goals are common even among individuals presenting to SUD treatment. Among those seeking treatment for alcohol use disorder (AUD), studies with large samples have cited rates of nonabstinence goals ranging from 17% (Berglund et al., 2019) to 87% (Enggasser et al., 2015). In Europe, about half (44–46%) of individuals seeking treatment for AUD have non-abstinence goals (Haug & Schaub, 2016; Heather, Adamson, Raistrick, & Slegg, 2010). In the U.S., about 25% of patients seeking treatment for AUD endorsed nonabstinence goals in the early 2010s (Dunn & Strain, 2013), while more recent clinical trials have found between 82 and 91% of those seeking treatment for AUD prefer nonabstinence goals (Falk et al., 2019; Witkiewitz et al., 2019).

Less research has examined the goals of individuals with drug use disorders (DUDs), but the few studies that assessed substance use goals among individuals seeking DUD treatment suggest about 1 in 5 endorse nonabstinence goals (Lozano et al., 2015; McKeganey, Morris, Neale, & Robertson, 2004). This proportion may be higher (about 29%) among those who seek treatment for cannabis use (Lozano et al., 2006). In addition to individuals with only nonabstinence goals, 20% of those seeking treatment for DUD simultaneously endorse a combination of abstinence and nonabstinence goals if given the option to select all that apply from a list of goal options (e.g., abstinence, stabilization, and safer use; McKeganey et al., 2004). Studies have not compared rates of non-abstinence goals between individuals with AUD vs. DUD; however, among individuals seeking AUD treatment, comorbid DUD is not significantly associated with likelihood of either goal choice (Lozano et al., 2015).

### 3.2. Relationship between goal choice and treatment outcomes

Individuals with both abstinence and nonabstinence goals benefit from treatment. For example, in AUD treatment, individuals with both goal choices demonstrate significant improvements in drinking-related outcomes (e.g., lower percent drinking days, fewer heavy drinking days), alcohol-related problems, and psychosocial functioning (Dunn & Strain, 2013). Additionally, individuals are most likely to achieve the outcomes that are consistent with their goals (i.e., moderation vs. abstinence), based on studies of both controlled drinking and drug use (Adamson, Heather, Morton, & Raistrick, 2010; Booth, Dale, & Ansari, 1984; Lozano et al., 2006; Schippers & Nelissen, 2006).

Evidence comparing long-term outcomes between individuals with abstinence vs. nonabstinence goals is mixed, and to date no published meta-analyses have systematically examined this question. Most relevant research comes from the AUD treatment literature, in which multiple studies with large sample sizes (e.g., >100) have compared outcomes based on client goal selection. Not surprisingly, these have generally found that individuals with abstinence goals are more likely to achieve abstinence outcomes (e.g., higher percent days abstinent) compared to those with controlled drinking goals (Adamson et al., 2010; Berglund et al., 2019; Bujarski, O'Malley, Lunny, & Ray, 2013; Meyer, Wapp, Strik, & Moggi, 2014). Studies have also identified positive associations between abstinence goals and likelihood of "non-hazardous" or "low-risk drinking" (Adamson et al., 2010; Berglund et al., 2019; Haug, Castro, Eggli, & Schaub, 2018). There are mixed findings related to SUD symptom severity, with one study finding no differences by goal type (Adamson et al., 2010), and another reporting fewer SUD symptoms 2.5 years post treatment among those with abstinence goals, with no differences by five years post treatment (Berglund et al., 2019).

It is important to highlight that most of the studies cited above did not provide goal-matched treatment; thus, these outcomes generally reflect differences between individuals with abstinence vs. non-abstinence goals who participated in abstinence-based AUD treatment. Earlier studies that used random assignment to abstinence- or moderation-focused AUD treatment found similar outcomes between treatment types (Graber & Miller, 1988; Orford & Keddie, 1986; Sanchez-Craig, Annis, Bronet, & MacDonald, 1984), though sample sizes were smaller and in one study, higher-severity AUD patients were overrepresented in the abstinence group (Orford & Keddie, 1986).

Fewer studies have examined outcomes associated with goal choice in DUD treatment. In a study of cannabis users participating in abstinence-oriented treatment, those with moderation goals were more likely to have non-moderate use outcomes (i.e., to use more than outlined in goals) than the abstinence goal group (Lozano et al., 2006). In contrast, a recent evaluation of data from seven predominantly abstinence-focused cocaine treatment studies found reducing cocaine use to a low frequency was associated with comparable outcomes at 6 and 12-month follow-ups compared to abstinence among those with high-frequency use at baseline. Specifically, abstainers had significantly lower cocaine problem severity and fewer days of cocaine use at month 6, but these differences disappeared by month 12, at which point they demonstrated significantly *greater* psychological and legal problems. There were no significant differences in problems related to other drug or alcohol use, medical issues, family, or employment at months 6 or 12 (Roos et al., 2019).

Individuals with fewer years of addiction and lower severity SUDs generally have the highest likelihood of achieving moderate, low-consequence substance use after treatment (Öjehagen & Berglund, 1989; Witkiewitz, 2008). Notably, these individuals are also most likely to endorse nonabstinence goals (Berglund et al., 2019; Dunn & Strain, 2013; Lozano et al., 2006; Lozano et al., 2015; Mowbray et al., 2013). There is some evidence that patients with early-stage problem drinking are more successful at reducing alcohol consumption in treatment focused on moderation vs. abstinence (Sanchez-Craig et al., 1984), and that those with low-severity AUD have greater retention when working toward controlled drinking vs. abstinence goals (Haug, Eggli, & Schaub, 2017). In contrast, individuals with greater SUD severity, who are more likely to have abstinence goals, generally have the best outcomes when working toward abstinence (Witkiewitz, 2008). Together, this suggests a promising degree of alignment between goal selection and probability of success, and it highlights the potential utility of nonabstinence treatment as an “early intervention” approach to prevent SUD escalation.

Of note, goal choice often changes over the course of treatment. Most studies have found that a greater proportion of participants endorse abstinence goals at the end of treatment compared to the beginning (Enggasser et al., 2015; Hodgins, Leigh, Milne, & Gerrish, 1997; Meyer et al., 2014), with the exception of one report of stable goals over time (Haug et al., 2018), and one reporting an increase in nonabstinence goals (Öjehagen & Berglund, 1989). Individuals with greater SUD severity tend to be most receptive to therapist input about goal selection (Sobell, Sobell, Bogardis, Leo, & Skinner, 1992). This suggests that treatment experiences and therapist input can influence participant goals over time, and there is value in engaging patients with non-abstinence goals in treatment.

In sum, research suggests that SUD treatment is beneficial to individuals with both abstinence and nonabstinence goals. Data comparing outcomes in abstinence vs. nonabstinence treatment are mixed, but abstinence goals may be associated with the greatest reductions in substance use among SUD patients. Individuals with lower problem severity and fewer years of problematic use sometimes benefit more from nonabstinence treatment. Previous reviews have recommended that treatment should be tailored to patient goals with consideration of SUD severity (Van Amsterdam & Van Den Brink, 2013; Witkiewitz & Alan Marlatt, 2006); however, some still argue that abstinence is favorable if patients are receptive (Mann, Aubin, & Witkiewitz, 2017).

### 3.3. Goal-aligned treatment

Multiple theories of motivation for behavior change support the importance of self-selection of goals in SUD treatment (Sobell et al., 1992). For example, Bandura, who developed Social Cognitive Theory, posited that perceived choice is key to goal adherence, and that individuals may feel less motivation when goals are imposed by others (Bandura, 1986). Miller, whose seminal work on motivation and readiness for treatment led to multiple widely used measures of SUD treatment readiness and the development of Motivational Interviewing, also argued for the importance of goal choice in treatment (Miller, 1985). Drawing from Intrinsic Motivation Theory (Deci, 1975) and the controlled drinking literature, Miller (1985) argued that clients benefit most when offered choices, both for

drinking goals and intervention approaches. A key point in Miller's theory is that motivation for change is "action-specific"; he argues that no one is "unmotivated," but that people are motivated to specific actions or goals (Miller, 2006). Thus, while individuals who lack commitment to abstinence are often seen as "unmotivated" for treatment, Miller's theory of treatment motivation would suggest these individuals may simply be motivated to *different* goals (e.g., reducing substance-related harms), and that identifying and aligning treatment to these goals is key for successful treatment.

A wide range of empirical research also supports the importance of goal alignment between clients and providers, both for psychotherapy broadly and for SUD treatment specifically. A review examining factors related to the effectiveness of psychotherapy found that among all common and specific factors assessed, goal consensus and collaboration had the largest effect size (Wampold, 2015). Most individuals entering SUD treatment prefer having a goal choice rather than having goals determined by their provider (Sobell et al., 1992), and research on SUD treatment highlights multiple benefits of including nonabstinence goals in treatment. For example, evidence from studies examining both AUD and DUD treatment suggests that clients have better outcomes when they select their goals (Booth et al., 1984; Lozano et al., 2006), and that goal choice (vs. assigned goals) is associated with greater goal commitment and self-efficacy (Lozano & Stephens, 2010). Furthermore, goal alignment is a central component of therapeutic alliance (Elvins & Green, 2008), and stronger therapeutic alliance early in SUD treatment is predictive of greater treatment retention (for a review, see Meier, Barrowclough, & Donmall, 2005). In sum, there is a strong theoretical and empirical rationale for offering treatment options aligned with client goals.

### 3.4. Consequences of abstinence-only treatment

**3.4.1. Increased barriers to SUD treatment—**Researchers have long posited that offering goal choice (i.e., non-abstinence and abstinence treatment options) may be key to engaging more individuals in SUD treatment, including those earlier in their addictions (Bujarski et al., 2013; Mann et al., 2017; Marlatt, Blume, & Parks, 2001; Sobell & Sobell, 1995). To date, however, there has been little empirical research directly testing this hypothesis. Advocates of nonabstinence approaches often point to indirect evidence, including research examining reasons people with SUD do and do not enter treatment. This literature – most of which has been conducted in the U.S. – suggests a strong link between abstinence goals and treatment entry. For example, in one study testing the predictive validity of a measure of treatment readiness among non-treatment-seeking people who use drugs, the authors found that the only item in their measure that significantly predicted future treatment entry was motivation to quit using (Neff & Zule, 2002). The study was especially notable because most other treatment readiness measures have been validated on treatment-seeking samples (see Freyer et al., 2004). This finding supplements the numerous studies that identify lack of readiness for abstinence as the top reason for non-engagement in SUD treatment, even among those who recognize a need for treatment (e.g., Chen, Strain, Crum, & Mojtabai, 2013; SAMHSA, 2019a).

Given data demonstrating a clear link between abstinence goals and treatment engagement in a primarily abstinence-based SUD treatment system, it is reasonable to hypothesize that

offering nonabstinence treatment would increase overall engagement by appealing to those with nonabstinence goals. Indeed, there is anecdotal evidence that this may be the case; for example, a qualitative study of nonabstinence drug treatment in Denmark described a client saying that he would not have presented to abstinence-only treatment due to his goal of moderate use (Järvinen, 2017). Additionally, in the United Kingdom, where there is greater access to nonabstinence treatment (Rosenberg & Melville, 2005; Rosenberg & Phillips, 2003), the proportion of individuals with opioid use disorder engaged in treatment is more than twice that of the U.S. (60% vs. 28%; Burkinshaw et al., 2017).

**3.4.2. Negative impact on treatment retention and completion—**One drawback of the current "abstinence-only" treatment model is that it is associated with abstinence *requirements* during treatment which can contribute to lower treatment completion. Prolonged engagement in SUD treatment is associated with positive outcomes, whereas premature termination is associated with poorer outcomes (Hubbard, Craddock, & Anderson, 2003; Wallace & Weeks, 2004), presenting a clear rationale for prioritizing SUD treatment retention. However, it is a common practice in abstinence-based SUD treatment centers to involuntarily discharge participants who return to use during a treatment episode (White et al., 2005). Discharge for this reason is considered "administrative discharge," a term which also includes involuntary discharge due to noncompliance with other program rules and expectations. Nearly 100,000 treatment episodes in the U.S. end each year due to administrative discharge (SAMHSA, 2019b).

There is very little research examining the outcomes associated with administrative discharge. However, researchers have pointed out an inherent contradiction in the practice of terminating treatment for demonstrating a primary symptom of the disorder. Indeed, SUDs are *defined* by compulsive substance use despite negative consequences (American Psychiatric Association, 2013), and there are no other major health problems "for which one is admitted for treatment and then thrown out for becoming symptomatic in the service setting" (White et al., 2005, p. 4). This practice is especially concerning given the dearth of research assessing its impact (Williams, 2016).

Administrative discharge due to substance use is not a *necessary* practice even within abstinence-focused treatment (Futterman, Lorente, & Silverman, 2004), and is likely linked to the assumption that continued use indicates lack of readiness for treatment, and that abstinence is the sole marker of treatment success. In the United Kingdom, where there is greater acceptance of nonabstinence goals and availability of nonabstinence treatment (Rosenberg et al., 2020; Rosenberg & Melville, 2005), the rate of administrative discharge is much lower than in the U.S. (1.42% vs. 6% of treatment episodes; Newham, Russell, & Davies, 2010; SAMHSA, 2019b).

In addition to issues with administrative discharge, abstinence-only treatment may contribute to high rates of individuals not completing SUD treatment. About 26% of all U.S. treatment episodes end by individuals leaving the treatment program prior to treatment completion (SAMHSA, 2019b). Studies which have interviewed participants and staff of SUD treatment centers have cited ambivalence about abstinence as among the top reasons for premature treatment termination (Ball, Carroll, Canning-Ball, & Rounsaville, 2006; Palmer, Murphy,

Piselli, & Ball, 2009; Wagner, Acier, & Dietlin, 2018). One study found that among those who did not complete an abstinence-based (12-Step) SUD treatment program, ongoing/relapse to substance use was the most frequently-endorsed reason for leaving treatment early (Laudet, Stanick, & Sands, 2009). A recent qualitative study found that concern about missing substances was significantly correlated with not completing treatment (Zemore, Ware, Gilbert, & Pinedo, 2021). Unfortunately, few quantitative, survey-based studies have included substance use during treatment as a potential reason for treatment noncompletion, representing a significant gap in this body of literature (for a review, see Brorson, Ajo Arnevik, Rand-Hendriksen, & Duckert, 2013). Additionally, no studies identified in this review compared reasons for not completing treatment between abstinence-focused and nonabstinence treatment.

While there have been calls for abstinence-focused treatment settings to relax punitive policies around substance use during treatment (Marlatt et al., 2001; White et al., 2005), there may also be specific benefits provided by nonabstinence treatment in retaining individuals who continue to use (or return to use) during treatment. For example, offering nonabstinence treatment may provide a clearer path forward for those who are ambivalent about or unable to achieve abstinence, while such individuals would be more likely to drop out of abstinence-focused treatment. To date there has been limited research on retention rates in nonabstinence treatment. Studies of controlled drinking have generally found similar rates of retention among individuals working toward abstinence vs. controlled drinking (Dunn & Strain, 2013; Haug & Schaub, 2016; Sanchez-Craig et al., 1984), though one study reported the rate of discontinuing treatment was twice as high among individuals working toward abstinence compared to controlled use (30% vs. 14%; Schippers & Nelissen, 2006). This suggests that individuals with non-abstinence goals are retained as well as, if not better than, those working toward abstinence, though additional research is needed to confirm these results and examine the effect of goal-matching on retention.

**3.4.3. Reduction in treatment effectiveness—**A singular focus on abstinence may negatively impact the long-term effectiveness of SUD treatment by increasing the likelihood and severity of relapse and discouraging continued attempts at recovery. A majority of individuals who complete SUD treatment return to use within one year post-treatment (Brandon, Vidrine, & Litvin, 2007). Indeed, those who engage in SUD treatment require an average of three to four treatment episodes over about nine years to achieve long-term abstinence (Dennis, Scott, Funk, & Foss, 2005). This suggests that returns to use are the norm rather than the exception, and that an expectation of sustained, continuous abstinence during and after treatment is unrealistic for most people with SUD. In this context, researchers have argued that strategies for managing returns to substance use are essential components of effective SUD treatment, and that inflexibility around abstinence can lead to poorer outcomes (Larimer, Palmer, & Marlatt, 1999; Miller, 1996). Indeed, individuals with abstinence goals demonstrate heavier alcohol use on days when drinking occurs compared to individuals with controlled drinking goals, though they also experience more days of abstinence (Adamson et al., 2010; Bujarski et al., 2013; Heather et al., 2010). One mechanism theorized to explain this finding is the “abstinence violation effect,” which refers to a negative cognitive and affective response experienced after a return to

substance use that contributes to more severe and problematic episodes of use (Marlatt & Gordon, 1985). The abstinence violation effect is believed to result from an inflexible, binary view that those with SUD are only capable of abstinence or disordered use; thus, any substance use is equated with a "full-blown reversal" or treatment failure (Miller, 1996, p. S22). Accordingly, endorsing these beliefs is associated with an increased likelihood of post-treatment relapse (Miller, Westerberg, Harris, & Tonigan, 1996).

In contrast, the harm reduction framework views substance use on a spectrum, framing any positive change (e.g., steps toward safer or more controlled use) as a marker of treatment success. Returning to use under this framework might be understood as indicating a need for further skill development or a change in treatment goals or motivation – natural parts of the treatment process – rather than as a treatment failure (Marlatt et al., 2001). This perspective may have long-term benefits for recovery and ongoing help-seeking, as repeated treatment failures can contribute to increased stigma (Luoma et al., 2007), which is associated with lower probability of re-engaging in treatment (Keyes et al., 2010). However, there is a gap in research regarding the impact of ascribing to beliefs associated with harm reduction on long-term treatment outcomes.

## 3.5. Feasibility of nonabstinence goals

**3.5.1. Feasibility of achieving moderation—**A primary concern regarding nonabstinence goals is that individuals with SUD will not be able to achieve moderate or controlled use. Rooted in the disease model of addiction, this assumption stems from an understanding of addiction as a chronic, incurable disease characterized by total loss of control over substance use, and thus manageable only by abstinence (Marlatt et al., 2001; Van Amsterdam & Van Den Brink, 2013; Wilbanks, 1989). This model has not been substantiated, at least with regard to alcohol use. Rather, decades of research demonstrates that a significant proportion of those with AUD can maintain moderate and/or low-risk drinking after receiving treatment, and that treatment-related reductions in drinking are sustainable and associated with improved functioning even for individuals who continue to engage in some heavy drinking (e.g., Witkiewitz et al., 2020, 2021). The proportion of treated individuals with positive long-term moderation outcomes varies significantly between studies (see Van Amsterdam & Van Den Brink, 2013); more recent studies with larger ($N > 100$) samples report 25–59% of individuals treated with moderation goals maintain nonhazardous or low-risk drinking up to five years post-treatment (Berglund et al., 2019; Enggasser et al., 2015; Haug et al., 2018).

There is less research examining the extent to which moderation/controlled use goals are feasible for individuals with DUDs. The most recent national survey assessing rates of illicit drug use and SUDs found that among individuals who report illicit drug use in the past year, approximately 15% meet criteria for one or more DUD (SAMHSA, 2019a). The proportions vary between specific drugs. About 10% of individuals who report cannabis use in the past year meet criteria for a cannabis use disorder, while this proportion increases to 18%, 19%, 58%, and 65% of those with past year use of cocaine, opioids (misuse), methamphetamine, and heroin, respectively. These data suggest that non-disordered drug use is possible, even for a substantial portion of individuals who use drugs such as heroin

(about 45%). However, they do not elucidate patterns of non-disordered use over time, nor the likelihood of maintaining drug use without developing a DUD.

A small body of research has identified patterns of controlled and occasional drug use among subsets of individuals who use illicit drugs, but there are significant gaps in this research regarding treatment implications. For example, there was a series of studies in the 1970s that described small, nonrepresentative samples of "occasional users" of illicit opioids including heroin, suggesting that at least some individuals maintain patterns of infrequent drug use over months or years (Gay, Senay, & Newmeyer, 1974; Powell, 1973; Zinberg, Harding, & Wink-eller, 1977). More recent studies have supported this conclusion with larger ($N > 100$) samples (Harris et al., 2013; Shewan & Dalgarno, 2005; Stea, Yakovenko, & Hodgins, 2015; Warburton, Turnbull, & Hough, 2005). Most notably, in one large-scale study of individuals who inject heroin in San Francisco ($N = 2410$), 15% reported injecting heroin between 1 and 10 times per month, with a median of 21 years of injecting experience, and 66% had previous SUD treatment experience (Harris et al., 2013). Other studies have also found subgroups of individuals who use heroin and cannabis who previously experienced dependence but returned to non-dependent use (Stea et al., 2015; Warburton et al., 2005). Together, this highlights that a notable portion of individuals use drugs occasionally (some over long periods of time), and some achieve moderate use after treatment for DUD. However, additional research is needed to further examine for *whom* non-disordered drug use is possible, and how common *recovery* to non-problematic use is for individuals with lifetime DUDs.

In considering the feasibility of nonabstinence goals for different client populations, some researchers have made a distinction between moderation goals (defining moderation as level of use with no harm) and harm reduction goals (reducing but not necessarily eliminating harm). It has been suggested that moderation is an appropriate goal for AUD treatment, whereas harm reduction is more appropriate for illicit drug use because of legal harms associated with illegal substances (Finney & Moos, 2006). Recent changes in the legal status of cannabis may blur these lines, as cannabis is legal in some U.S. states but "illicit" in others and by federal standards (Kiluk et al., 2019).

Harm reduction may also be well-suited for people with high-risk drug use and severe, treatment-resistant SUDs (Finney & Moos, 2006; Ivsins, Pauly, Brown, & Evans, 2019). These individuals are considered good candidates for harm reduction interventions because of the severity of substance-related negative consequences, and thus the urgency of reducing these harms. Indeed, this argument has been central to advocacy around harm reduction interventions for people who inject drugs, such as SSPs and safe injection facilities (Barry et al., 2019; Kulikowski & Linder, 2018). It has also been used to advocate for managed alcohol and housing first programs, which represent a harm reduction approach to high-risk drinking among people with severe AUD (Collins et al., 2012; Ivsins et al., 2019). Advocates of managed alcohol programs also note that individuals with severe AUD and structural vulnerabilities often have low interest in and utilization of abstinence-oriented treatment, and that these treatments are less effective for this population (Ivsins et al., 2019), though there is limited research examining these claims.

In sum, research suggests that achieving and sustaining moderate substance use after treatment is feasible for between one-quarter to one-half of individuals with AUD when defining moderation as nonhazardous drinking. While there is evidence that a subset of individuals who use drugs engage in low-frequency, non-dependent drug use, there is insufficient research on this population to determine the proportion for whom moderation is a feasible treatment goal. However, among individuals with severe SUD and high-risk drug or alcohol use, the urgency of reducing substance-related harms presents a compelling argument for engaging these individuals in harm reduction-oriented treatment and interventions.

## 4. Models of nonabstinence psychosocial treatment for SUD

Psychologists have been studying nonabstinence psychotherapy for AUD since the 1970s, but this area of research is still considerably underdeveloped with regard to DUDs. Research on nonabstinence DUD treatment has generally focused on medication for opioid use disorder (OUD), including the opioid agonist medications methadone and buprenorphine (Drucker, Anderson, & Haemmig, 2016), while very few studies have examined psychosocial DUD treatments. Although medication is the gold standard of care for OUD (Connery, 2015), psychosocial treatment is important for those who use non-opioid drugs (for which there are no evidence-based medications), those who prefer psychotherapy to medication, and those who need psychosocial support while taking medication. Indeed, psychosocial treatment in conjunction with opioid agonist treatment is associated with better outcomes than medication alone (Dugosh et al., 2016). Of note, it is common in psychosocial SUD treatment settings for all patients to be grouped together regardless of SUD type (e.g., AUD and DUD). This may be at least in part because of the high prevalence of polysubstance use; indeed, multiple SUD diagnoses are the norm rather than the exception (Rounsaville, Petry, & Carroll, 2003), and about 1 in 8 individuals with SUD have co-occurring AUD and DUD (SAMHSA, 2019a). However, there may be differences in the effectiveness of specific treatments for AUD vs. DUD, and many AUD treatment effectiveness studies exclude patients with DUD (Rounsaville et al., 2003). Thus, while AUD treatment research can inform research directions for the treatment of other SUDs, it is also important to test the effectiveness of treatments across substance types.

Here we provide a brief review of existing models of nonabstinence psychosocial treatment, with the goal of summarizing the state of the literature and identifying notable gaps and directions for future research. Previous reviews have described nonabstinence pharmacological approaches (e.g., Connery, 2015; Palpacuer et al., 2018), which are outside the scope of the current review. We first describe treatment models with an explicit harm reduction or nonabstinence focus. While there are multiple such intervention approaches for treating AUD with strong empirical support, we highlight a dearth of research testing models of harm reduction treatment for DUD. Next, we review other established SUD treatment models that are compatible with non-abstinence goals. We focus our review on two well-studied approaches that were initially conceptualized – and have been frequently discussed in the empirical literature – as client-centered alternatives to abstinence-based treatment. Of note, other SUD treatment approaches that could be adapted to target nonabstinence goals

(e.g., contingency management, behavioral activation) are excluded from the current review due to lack of relevant empirical evidence.

## 4.1. Nonabstinence psychosocial treatment models

**4.1.1. Harm reduction treatments specific to alcohol use disorder—**Most harm reduction-focused treatments that have been empirically evaluated are specific to AUD. Multiple such models have strong empirical support and have been described in previous reviews (Marlatt & Witkiewitz, 2002; Witkiewitz & Alan Marlatt, 2006). These include cognitive-behavioral and skills-focused drinking interventions (e.g., Behavioral Self-Control Training), brief interventions for primary care settings, and alcohol risk reduction interventions for college students (e. g., Alcohol Skills Training Program and Brief Alcohol Screening and Intervention for College Students). These models generally use motivational and cognitive-behavioral strategies to increase motivation to change, provide AUD psychoeducation, and teach skills for regulating drinking. Overall, the literature suggests that nonabstinence treatment for AUD can significantly reduce alcohol consumption and related problems, even for individuals with high-risk drinking and alcohol dependence (Charlet & Heinz, 2017; Marlatt & Witkiewitz, 2010). Reduced alcohol consumption is associated with physical and psychological benefits (Witkiewitz et al., 2021), and there is especially strong empirical support for early intervention (i.e., treatment of lower-severity AUD and those in earlier stages of addiction) using harm reduction strategies (Charlet & Heinz, 2017).

**4.1.2. Harm reduction psychotherapy—**Multiple versions of harm reduction psychotherapy for alcohol and drug use have been described in detail but not yet studied empirically. Individual harm reduction psychotherapy, as described by Tatarsky (2002, 2003), Denning (2000), and Denning and Little (2011), is a holistic treatment approach that emphasizes the importance of developing therapeutic alliance, exploring reasons for substance use, resolving ambivalence about change, collaborative goal-setting and treatment planning, and use of multiple evidence-based strategies (drawing from cognitive-behavioral, motivational, mindfulness, and psychoanalytic literatures) to support behavior change. Consistent with the philosophy of harm reduction as described by Marlatt et al. (2001), harm reduction psychotherapy is accepting of a wide range of client goals, including risk reduction, moderation, and abstinence (of note, abstinence is conceptualized as consistent with harm reduction when it is a goal chosen by the client). Publications about harm reduction psychotherapy have included numerous case studies and client examples that highlight the utility of the approach for helping clients achieve reductions in drug and alcohol use and related problems, moderate/controlled use, and abstinence (Rothschild, 2015b; Tatarsky, 2002; Tatarsky & Kellogg, 2010). However, to date there have been no published empirical trials testing the effectiveness of the approach.

Harm reduction therapy has also been applied in group format, mirroring the approach and components of individual harm reduction psychotherapy but with added focus on building social support and receiving feedback and advice from peers (Little, 2006; Little & Franskoviak, 2010). These groups tend to include individuals who use a range of substances and who endorse a range of goals, including reducing substance use and/or substance-related

harms, controlled/moderate use, and abstinence (Little, 2006). Additionally, some groups target individuals with co-occurring psychiatric disorders (Little, Hodari, Lavender, & Berg, 2008). Important features common to these groups include low program barriers (e.g., drop-in groups, few rules) and inclusiveness of clients with difficult presentations (Little & Franskoviak, 2010).

**4.1.3. Harm reduction integrated in SUD treatment—**While models of nonabstinence treatment in the U.S. have been described primarily in harm reduction-specific settings (e.g., private practice settings and nonprofit organizations such as the Harm Reduction Therapy Center; Little & Franskoviak, 2010), there are also examples from Europe in which harm reduction has been integrated into community-based SUD treatment. Unfortunately, there has been little empirical research evaluating this approach among individuals with DUD; evidence of effectiveness comes primarily from observational research. For example, at a large outpatient SUD treatment center in Amsterdam, goal-aligned treatment for drug and alcohol use involves a version of harm reduction psychotherapy that integrates MI and CBT approaches, and focuses on motivational enhancement, self-control training, and relapse prevention (Schippers & Nelissen, 2006). Participants with controlled use goals in this center are typically able to achieve less problematic (38%) or non-problematic (32%) use, while a minority achieve abstinence with (8%) or without (6%) incidental relapse (outcomes were not separately assessed for those with AUD vs. DUD; Schippers & Nelissen, 2006).

**4.1.4. Risk reduction interventions—**A number of studies have examined psychosocial risk reduction interventions for individuals with high-risk drug use, especially people who inject drugs. In contrast to the holistic approach of harm reduction psychotherapy, risk reduction interventions are generally designed to target specific HIV risk behaviors (e.g., injection or sexual risk behaviors) without directly addressing mechanisms of SUD, and thus are quite limited in scope. However, these interventions also typically lack an abstinence focus and sometimes result in reductions in drug use. Examples include couple-based motivational enhancement and communication (El-Bassel et al., 2011; Gilbert et al., 2010), group and individual cognitive behavioral (Hershberger, Wood, & Fisher, 2003; Rhodes & Humfleet, 1993), and individual motivational and skills-focused (Sterk, Theall, Elifson, & Kidder, 2003; Tucker et al., 2004) interventions. Meta-analyses of psychosocial and behavioral interventions for HIV risk reduction among people who inject drugs have found that, compared to control conditions (e.g., information, HIV testing), these interventions are more effective at reducing injection risk behaviors, injection frequency, and non-injection drug use, as well as facilitating treatment entry (Copenhaver, Johnson, Lee, Harman, & Carey, 2006; Gilchrist et al., 2017).

### 4.2. Established treatment models compatible with nonabstinence goals

**4.2.1. Motivational interviewing—**Motivational Interviewing (MI) is among the most well-researched treatment models compatible with nonabstinence goals. MI is a client-centered counseling approach that aims to increase motivation for behavior change by exploring and resolving ambivalence. MI was originally developed for alcohol use, though it has been applied to a range of SUDs. Reviews of MI have generally found positive

effects on substance use outcomes in adult populations, including in reducing use and substance-related problems (Appiah-Brempong, Okyere, Owusu-Addo, & Cross, 2014; Burke, Arkowitz, & Menchola, 2003; Dunn, Deroo, & Rivara, 2001), though meta-analyses specific to adolescents and young adults have been less positive (Barnett, Sussman, Smith, Rohrbach, & Spruijt-Metz, 2012; Li, Zhu, Tse, Tse, & Wong, 2016). In terms of comparative effectiveness between substances, one meta-analysis reported the largest effect sizes for cannabis-related problems ($g = 0.26$), followed by problems related to alcohol ($g = 0.15$) and other drugs ($g = 0.08$). The review identified no benefit of MI over other active SUD treatments for any outcome (Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010).

Early applications of MI by Miller and Rollnick targeted problem drinking through a harm reduction framework that encouraged patients to set attainable drinking goals (Miller, Sovereign, & Krege, 1988; Rollnick & Heather, 1992). Numerous other studies have also tested MI for alcohol use outside of abstinence-based treatment, including among college students (for a review, see Appiah-Brempong et al., 2014), patients in medical settings (Beckham, 2007; Heather, Rollnick, Bell, & Richmond, 1996; Hulse & Tait, 2002), and individuals with co-occurring drug use or psychiatric disorders (Laker, 2007; Nyamathi et al., 2010; Stein, Charuvastra, Maksad, & Anderson, 2002). These studies have generally found that MI is associated with modest reductions in drinking behaviors as well as in alcohol-related problems, but comparisons between MI and other interventions have yielded mixed results (Heather et al., 1996; Hulse & Tait, 2003; Nyamathi et al., 2010).

MI has been described as inherently incompatible with abstinence-only treatment (Gallagher & Bremer, 2018), yet much of the research on MI for DUDs has focused specifically on its utility in either encouraging entry to or participation in abstinence-based treatment, or as a supplement to increase the effectiveness of these treatments. Indeed, the most consistent positive outcomes of MI in SUD research are in these domains (Dunn et al., 2001). Fewer studies have examined MI as a nonabstinence treatment for DUD. Most of these report that MI is associated with at least one positive outcome, including reductions in drug use and SUD symptoms (Lee et al., 2013; Schneider, Casey, & Kohn, 2000; Stein, Hagerty, Herman, Phipps, & Anderson, 2011; Stein, Herman, & Anderson, 2009; Stephens, Roffman, Fearer, Williams, & Burke, 2007). However, one study found effects of MI only in the subgroup with the highest level of baseline drug use (Stein et al., 2009), and others identified no differences between MI and comparison conditions (Baker et al., 2002; Madigan et al., 2013; Schneider et al., 2000). Studies often omit information about whether nonabstinence goals were accepted or goal-aligned treatment offered, making it difficult to parse literature on MI as an abstinence vs. nonabstinence treatment. Thus, while there is some evidence to support MI as a nonabstinence DUD intervention, evidence most strongly supports its use as an adjunct to abstinence-based treatment.

**4.2.2. Relapse prevention—**Relapse Prevention (RP) is another well-studied model used in both AUD and DUD treatment (Marlatt & Gordon, 1985). In its original form, RP aims to reduce risk of relapse by teaching participants cognitive and behavioral skills for coping in high-risk situations (Marlatt & Gordon, 1985). More recent versions of RP have included mindfulness-based techniques (Bowen, Chawla, & Marlatt, 2010; Witkiewitz et al., 2014). The RP model has been studied among individuals with both AUD and DUD

(especially Cocaine Use Disorder, e.g., Carroll, Rounsaville, & Gawin, 1991); with the largest effect sizes identified in the treatment of AUD (Irvin, Bowers, Dunn, & Wang, 1999). As a newer iteration of RP, Mindfulness-Based Relapse Prevention (MBRP) has a less extensive research base, though it has been tested in samples with a range of SUDs (e.g., Bowen et al., 2009; Bowen et al., 2014; Witkiewitz et al., 2014).

Marlatt explicitly described RP as a model that could be used to maintain abstinence or harm reduction treatment goals (Marlatt & Donovan, 2005), and MBRP has been described as a harm reduction treatment approach due to its emphasis on normalizing and accepting lapses as a natural part of the recovery process (Bayles, 2014). However, like the body of research on MI, most studies of RP and MBRP have been conducted in the context of abstinence-focused treatment. Nonabstinence applications of RP have primarily targeted problematic drinking among college students; these studies report that RP is associated with reductions in alcohol consumption (Larimer & Marlatt, 1990). Additionally, MBRP combined with transcranial direct current stimulation has been associated with drinking reductions among individuals with that goal (Witkiewitz et al., 2019). A 2008 meta-analysis of randomized controlled trials (RCTs) of psychosocial DUD treatment identified five studies testing RP, all of which were conducted in the context of abstinence-based treatment (Dutra et al., 2008). Similarly, most studies of MBRP have tested the approach as an adjunct to abstinence-based outpatient and residential treatment (Grant et al., 2017). Thus, despite RP's compatibility with the harm reduction philosophy, there is limited evidence of its effectiveness in helping clients – especially those with DUD – achieve nonabstinence goals.

### 4.3. Summary of the state of the literature

The current review highlights a notable gap in research empirically evaluating the effectiveness of nonabstinence approaches for DUD treatment. While multiple harm reduction-focused treatments for AUD have strong empirical support, there is very little research testing models of nonabstinence treatment for drug use. Despite compatibility with harm reduction in established SUD treatment models such as MI and RP, there is a dearth of evidence testing these as standalone treatments for helping patients achieve nonabstinence goals; this is especially true regarding DUD (vs. AUD). In sum, the current body of literature reflects multiple well-studied nonabstinence approaches for treating AUD and exceedingly little research testing nonabstinence treatments for drug use problems, representing a notable gap in the literature.

## 5. Future directions for research

The current review highlights multiple important directions for future research related to nonabstinence SUD treatment. Overall, increased research attention on nonabstinence treatment is vital to filling gaps in knowledge. For example, despite being widely cited as a primary rationale for nonabstinence treatment, the extent to which offering nonabstinence options increases treatment utilization (or retention) is unknown. In addition to evaluating nonabstinence treatments specifically, researchers could help move the field forward by increased attention to nonabstinence goals more broadly. For example, all studies with SUD populations could include brief questionnaires assessing short-and long-term substance use

goals, and treatment researchers could report the extent to which nonabstinence goals are honored or permitted in their study interventions and contexts, regardless of treatment type. There is also a need for updated research examining standards of practice in community SUD treatment, including acceptance of non-abstinence goals and facility policies such as administrative discharge.

### 5.1. Nonabstinence treatment effectiveness

Perhaps the most notable gap identified by this review is the dearth of research empirically evaluating the effectiveness of nonabstinence approaches for DUD treatment. Given low treatment engagement and high rates of health-related harms among individuals who use drugs, combined with evidence of nonabstinence goals among a substantial portion of treatment-seekers, testing nonabstinence treatment for drug use is a clear next step for the field. This could include further evaluating established intervention models (e.g., MI and RP) among individuals with DUD who have nonabstinence goals, adapting existing abstinence-focused treatments (e.g., Contingency Management) to nonabstinence applications, and testing the efficacy of newer models (e.g., harm reduction psychotherapy). Ultimately, nonabstinence treatments may overlap significantly with abstinence-focused treatment models. Harm reduction psychotherapies, for example, incorporate multiple modalities that have been most extensively studied as abstinence-focused SUD treatments (e.g., cognitive-behavioral therapy; mindfulness). However, it is also possible that adaptations will be needed for individuals with nonabstinence goals (e.g., additional support with goal setting and monitoring drug use; ongoing care to support maintenance goals), and currently there is a dearth of research in this area. An additional concern is that the lack of research supporting the efficacy of established interventions for achieving nonabstinence goals presents a barrier to implementation.

Evaluating nonabstinence treatment presents specific research challenges. Given the abstinence focus of many SUD treatment centers, studies may need to recruit using community outreach, which can yield fewer participants compared to recruiting from treatment (Jaffee et al., 2009). However, this approach is consistent with the goal of increasing treatment utilization by reaching those who may not otherwise present to treatment. Alternatively, researchers who conduct trials in community-based treatment centers will need to obtain buy-in to test nonabstinence approaches, which may necessitate waiving facility policies regarding drug use during treatment – a significant hurdle.

Lack of consensus around target outcomes also presents a challenge to evaluating the effectiveness of nonabstinence treatment. Drug use behaviors are generally considered the most important outcomes, but there is disagreement about definitions of moderate and controlled drinking and drug use (e.g., Järvinen, 2017; McCrady, 1985) as well as ongoing debate about whether health and quality of life outcomes should be prioritized (Donovan et al., 2012; Kiluk et al., 2019). Experts generally recommend that SUD treatment studies report substance use as well as related consequences, and select primary outcomes based on the study sample and goals (Donovan et al., 2012; Kiluk et al., 2019). This is especially important with regard to characterizing “moderate” use. While AUD treatment studies commonly rely on guidelines set by government agencies regarding a “low-risk”

or “nonhazardous” level of alcohol consumption (e.g., Enggasser et al., 2015), no such guidelines exist for illicit drug use. Thus, studies will need to emphasize measures of substance-related problems in addition to reporting the degree of substance use (e.g., frequency, quantity).

### 5.2. Addressing barriers to implementation

Low acceptance of nonabstinence goals among providers remains a significant barrier to implementing nonabstinence SUD treatments (Rosenberg et al., 2020), even for AUD treatments with established effectiveness. Research suggests that empirical evidence supporting harm reduction is often insufficient to create policy change (Allen, Ruiz, & O’Rourke, 2015). As policy-makers, community members, and treatment providers continue to reject scientific evidence supporting harm reduction, research examining more effective strategies for shifting public perception may be key to moving the field forward. For example, a growing body of research demonstrates significant social stigma toward people who use drugs (Kulesza, Larimer, & Rao, 2013), and there is some evidence that this stigma is associated with lower acceptance of harm reduction (Baker, Smith, Gulley, & Tomann, 2020). Additional research is needed to further examine this relationship; for example, researchers who develop and test interventions to reduce drug use stigma may also consider whether these interventions could lead to greater acceptance of nonabstinence outcomes among treatment providers.

Of note, when SUD treatment agencies have been asked why they do not provide nonabstinence treatment, the top reason cited is that non-abstinence goals are inconsistent with agency philosophy, as opposed to lack of scientific evidence of effectiveness (other reasons included not wanting to send the “wrong message” to clients and the perception that nonabstinence goals are ineffective; Rosenberg & Phillips, 2003). Thus, while it is vital to empirically test nonabstinence treatments, implementation research examining strategies to obtain buy-in from agency leadership may be just as impactful.

## 6. Conclusions

There is a clear need for treatment approaches that can reduce individual and societal harms associated with problematic drug use. The current review examined evidence in support of nonabstinence treatment for SUD to engage and retain more individuals in treatment and to improve treatment effectiveness. Though decades of empirical evidence support nonabstinence interventions for AUD, there is a clear gap in research examining nonabstinence psychosocial treatment for DUDs. Existing harm reduction psychotherapies draw from multiple evidence-based treatment modalities but have not yet been tested systematically. Given this notable gap in research, empirical attention to nonabstinence treatment is a logical next step for the field of SUD treatment research. The current review highlights multiple directions for future research, including testing the effectiveness of nonabstinence treatments for drug use and addressing barriers to implementation.

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