Research Article ISSN 2639-8451

Addiction Research

Evidence-Based Addiction Treatment Comparison: A Comprehensive Analysis of Substance Use and Process Addictions

Julian Ungar-Sargon, MD, PhD*

Borra College of Health Science, Dominican University IL, USA.

***Correspondence:**
Julian Ungar-Sargon, Borra College of Health Science, Dominican University IL, USA.

Received: 03 June 2025; **Accepted:** 02 July 2025; **Published:** 12 July 2025

Citation: Julian Ungar-Sargon. Evidence-Based Addiction Treatment Comparison: A Comprehensive Analysis of Substance Use and Process Addictions. Addict Res. 2025; 9(3): 1-13.

ABSTRACT

Background: *Addiction treatment has evolved dramatically over the past two decades, with mounting evidence supporting integrated approaches across both substance use disorders and process addictions. This comprehensive review synthesizes current evidence to guide clinical decision-making across the full spectrum of addictive disorders.*

Methods: *A systematic literature review was conducted examining evidence-based treatments for substance use disorders and process addictions. Sources included systematic reviews, meta-analyses, randomized controlled trials, and clinical guidelines from major databases and professional organizations. The review encompasses pharmacological interventions, behavioral therapies, and integrated treatment approaches.*

Results: *Combined cognitive behavioral therapy and pharmacotherapy demonstrated superior effectiveness compared to usual care and pharmacotherapy alone across multiple substance types [1]. Medication-assisted treatment represents the gold standard for opioid use disorders, with methadone showing four-fold increased treatment retention and reduced heroin use compared to placebo [2]. Process addictions, including food addiction (2.8% lifetime prevalence) [3], sex addiction (3-6% prevalence) [4,5], and gambling disorder (up to 6% global prevalence) [6], respond to adapted evidence-based interventions developed for substance use disorders. Twelve-step facilitation interventions showed 42% continuous abstinence at one year compared to 35% for other treatments including CBT [7,8]. Acceptance and commitment therapy demonstrated higher abstinence rates than CBT at end of treatment [9]. Implementation gaps persist, with only a small percentage of services providing evidence-based treatments despite robust efficacy data [10].*

Conclusions: *The evidence overwhelmingly supports integrated, multi-modal approaches combining pharmacotherapy with behavioral interventions when appropriate. Treatment selection should be individualized based on addiction type, severity, co-occurring conditions, and patient preferences while maintaining fidelity to evidence-based protocols. Process addictions require similar comprehensive approaches with adaptations for behavioral patterns. Addressing implementation gaps through workforce development, policy changes, and system-level improvements remains critical for translating evidence into practice.*

Keywords

Evidence-based treatment, Substance use disorders, Process addictions, Cognitive behavioral therapy, Medication-assisted treatment, Integrated care, Twelve-step facilitation, Behavioral interventions, Implementation science, Addiction medicine.

Introduction

The landscape of addiction treatment has evolved dramatically over the past two decades, with mounting evidence supporting the integration of pharmacological and behavioral interventions across both substance use disorders and process addictions. This comprehensive review synthesizes the current evidence base to provide clinicians, researchers, and policymakers with a thorough understanding of treatment effectiveness across the full spectrum of addictive disorders.

Combined cognitive behavioral therapy and pharmacotherapy was associated with increased benefit compared with usual care and pharmacotherapy [1], while emerging evidence demonstrates that process addictions—including food, sex, gambling, and technology addictions—respond to many of the same evidence-based interventions developed for substance use disorders, though with important adaptations for each specific behavioral pattern.

Addiction, as currently understood, encompasses both substance use disorders and behavioral addictions, characterized by compulsive engagement despite negative consequences [11]. Addiction is a chronic condition that involves compulsive seeking and taking of a substance or performing an activity despite negative or harmful consequences [11]. The neurobiological underpinnings appear remarkably similar across different addictive behaviors, as the release of dopamine in the nucleus accumbens plays a role in the reinforcing qualities of many forms of stimuli, including naturally reinforcing stimuli like palatable food and sex [12].

The foundation of contemporary addiction treatment rests on evidence-based practice, which was formally defined by Sackett et al. in 1996 to refer to the "conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" [13]. This approach emphasizes systematic evaluation of treatments through systematic reviews of controlled trials, a single randomized trial, systematic review of observational studies addressing patient-important outcomes, a single observational study addressing patient-important outcomes, and physiologic studies [14].

Despite robust evidence for effective treatments, a significant implementation gap persists. Research consistently demonstrates that whilst effective treatments exist for substance use and alcohol use disorders, they are not commonly practised. Studies have shown that only a small percentage of services provide evidence-based treatments such as addiction medications or psychosocial therapies [10]. This gap represents one of the most pressing challenges in addiction medicine today.

Medication-Assisted Treatment

Medication-Assisted Treatment, now more commonly termed Medications for Opioid Use Disorder (MOUD), represents the most robust evidence-based approach for opioid addiction. There are three medications approved by the FDA for the treatment of OUD: buprenorphine, methadone, and naltrexone. All three of these treatments have been demonstrated to be safe and effective [15].

The evidence supporting methadone is particularly compelling. A review of 11 randomized controlled trials found that, compared with a placebo or non-pharmacological therapy, people who received methadone were more than four times more likely to stay in treatment and had significantly lower rates of heroin use [2]. This medication works as a full agonist at opioid receptors, fully occupying the mu-opioid receptor, methadone lessens the painful symptoms of opiate withdrawal and blocks the euphoric effects of other opioid drugs [16].

Buprenorphine offers a unique pharmacological profile as a synthetic opioid medication that acts as a partial agonist at opioid receptors but does not produce the euphoria and sedation caused by heroin or other opioids [16]. While buprenorphine maintenance treatment is at least as effective as methadone in suppressing the use of illicit opioids among people who remain in treatment, it appears to be slightly less effective than methadone maintenance treatment at retaining people in treatment [17]. Naltrexone, available in extended-release formulations, provides a different mechanism of action. However, limited evidence suggests that, compared with a placebo, extended-release naltrexone may be associated with reduced opioid use, but more rigorous studies are needed [17].

The benefits of MOUD extend far beyond simple substance use reduction. Treatment with methadone or buprenorphine is also associated with lower rates of other opioid use, improved social functioning, decreased injection drug use, reduced HIV transmission risk behaviors, reduced risk of HIV diagnosis, reduced risk of hepatitis C virus (HCV) infection, and better quality of life compared to individuals with OUD not in treatment. Additionally, methadone is also associated with reduced levels of criminality for individuals with OUD [17].

For alcohol use disorders, three primary medications have FDA approval: naltrexone, acamprosate, and disulfiram. However, the evidence base varies considerably. While naltrexone and acamprosate show consistent benefits, the outcomes for disulfiram were ascertained to be inconclusive, including in a double-blind placebo treatment study of 605 subjects [18].

Despite the strong evidence base, implementation remains challenging. Despite decades of clinical research showing the efficacy of MAT in treatment OUD, MAT is still not widely used. Fewer than half of privately-funded substance use disorder treatment programs offer MAT and only one-third of patients with opioid dependence at these programs actually receive it. These barriers stem from a paucity of trained prescribers and negative attitudes and misunderstandings about addiction medications held

by the public, providers, and patients.

Cognitive Behavioral Therapy

Cognitive Behavioral Therapy represents the most extensively studied psychosocial intervention for addiction across substances. The approach is grounded in the understanding that addiction involves learned behaviors that can be modified through targeted interventions addressing thoughts, feelings, and behaviors. CBT therapists aim to reshape patients' negative thoughts: a change that empowers those in recovery to meet life's challenges [19].

The versatility of CBT across different substances is well-established. Some interventions, such as cognitive behavior therapy, motivational interviewing and relapse prevention, appear to be effective across many drugs of abuse [19]. Specifically, for group interventions, cognitive behavioral therapy (CBT) group therapy and contingency management (CM) groups appear to be more effective at reducing cocaine use than treatment as usual (TAU) groups [20].

The most significant advancement in understanding CBT effectiveness comes from research on combined treatment approaches. A comprehensive meta-analysis of 30 studies revealed that combined cognitive behavioral therapy and pharmacotherapy was associated with increased benefit compared with usual care and pharmacotherapy [1]. However, this research also provided important nuances: CBT did not perform better than another evidence-based modality in this context or as an add-on to combined usual care and pharmacotherapy [1].

This finding has profound implications for clinical practice. As the researchers concluded, these findings suggest that best practices in addiction treatment should include pharmacotherapy plus CBT or another evidence-based therapy, rather than usual clinical management or nonspecific counseling services [1].

Effective CBT for addiction typically incorporates multiple components: functional analysis of substance uses triggers, coping skills training, relapse prevention strategies, cognitive restructuring techniques, and behavioral activation strategies. The treatment is typically time-limited and highly structured, with the mean number of planned sessions was 16 (range, 4-48) in major clinical trials.

The effectiveness of CBT varies by setting and comparison condition. When examining specific contrasts, when CBT plus pharmacotherapy was compared with usual care plus pharmacotherapy, the effect for CBT on posttreatment frequency outcomes was small, homogeneous, and statistically significant. Effect sizes typically fall in the small to moderate range, which is consistent with other evidence-based treatments for addiction.

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy represents a newer approach that has gained significant empirical support in addiction treatment. Unlike traditional CBT, which focuses on changing thoughts and feelings, ACT emphasizes psychological flexibility—the ability to stay present with thoughts and feelings while pursuing valued behavior.

Recent systematic reviews have provided compelling evidence for ACT's effectiveness. ACT evidenced higher abstinence rates than CBT conditions at the end of treatment [9]. More specifically, ACT increased the odds of abstinence at EOT and at short-term follow-up, but not in the long term. The research demonstrates that ACT demonstrated higher abstinence rates than CBT conditions at EOT [9].

Research has identified several important factors that influence ACT effectiveness. Being younger was related to higher short- and long-term abstinence rates, while a higher number of ACT sessions increased long-term abstinence rates [9]. These findings suggest that ACT may be particularly beneficial for younger populations and that adequate dosage is crucial for sustained outcomes.

The proposed mechanism underlying ACT's effectiveness involves changes in psychological flexibility, though further studies are needed to clarify the effects of increasing psychological flexibility on addictive behaviors [9].

Motivational Interviewing

Motivational Interviewing has established itself as an effective intervention, particularly for alcohol use problems. The effectiveness of brief opportunistic interventions has been established primarily for alcohol use problems, although they have been applied to patients using other substances as well [19]. These interventions can be remarkably brief, as BIs can range from 5 min of brief advice to 15-30 min of brief counseling [19].

The appropriateness of brief interventions depends on the severity of the substance use problem. BIs are targeted at problematic or risky substance use and are not intended to treat people with serious substance use problems/those who are addicted or dependent [19]. This specificity is crucial for appropriate treatment matching.

While primarily studied in alcohol use, motivational interviewing shows broader applicability. Research indicates that relapse prevention support groups, motivational interviewing, and social support groups were all effective at reducing marijuana use relative to a delayed treatment control [20].

Contingency Management

Contingency Management directly addresses the neurobiological basis of addiction by providing alternative rewards for abstinence or treatment engagement. This approach is particularly effective for stimulant use disorders, where CM also appeared to be effective at reducing methamphetamine use relative to standard group treatment [20].

The evidence for contingency management is robust across multiple substances. Among all ten outcome studies, 100% provided evidence suggesting efficacy of BA/BE in targeting

substance use and/or use-related problems. In 90% (9/10) of studies, the BA/BE intervention condition evidenced significantly higher abstinence rates compared to controls and/or significant decreases in substance use from baseline [21].

The clinical significance of contingency management is demonstrated by robust effect sizes. The majority of studies (80%; 8/10) reported medium to large effect sizes, suggesting strong therapeutic potential for appropriately selected patients [21].

Long-term Treatment

Contemporary understanding of addiction emphasizes its chronic nature, requiring long-term management strategies. The reconceptualization of substance uses disorders (SUD) as a chronic phenomenon calls for a paradigm shift in service provision [22]. This paradigm shift has implications for treatment duration, as people with a SUD (excluding people with an opioid addiction) would need a minimal threshold of 90 service days to begin necessary changes toward recovery [22].

Despite recognition of addiction's chronic nature, current service delivery often falls short. In Canada, the United States, and Europe, treatment provision in most specialized services for SUD lasts less than six months, which would seem to correspond more closely to the needs of people with a temporary profile [22]. This mismatch between service provision and clinical need represents a significant gap in care.

While the evidence base for long-term treatment models is still developing, initial findings are promising. The efficacy of long-term treatment and support models has not been greatly studied, but the few studies that have looked at this question seem to indicate that they are an improvement on more standard treatments [22].

Process Addictions: Extending Evidence-Based Treatment to Behavioral Addictions

Process addictions, also termed behavioral addictions, represent a growing area of clinical concern. Process addictions can be treated, and most individuals respond to evidence-based treatment programs for this type of addiction [23]. These conditions include food addiction, gambling disorder, sex addiction, Internet addiction, social media addiction, video game addiction, shopping addiction, and other behaviors that are marked by poor impulse control [23].

The prevalence of these conditions is substantial. Estimates of lifetime prevalence rates in the US are 1–2% for compulsive gambling, 5% for sexual addiction, 2.8% for food addiction, and 5–6% for compulsive shopping [12]. Additionally, 3-6% of the U.S. population has a sex or relationship disorder [5].

The neurobiological basis for treating process addictions with substance use disorder interventions is well-established. Similar patterns of neural activation have been found in food addiction and substance use disorders, consisting mainly in elevated activity within the reward circuitry in response to food/drug cues and low activity in the circuitry responsible for inhibition of responses to food intake [24].

Process addictions often co-occur with substance use disorders. More than 40% of people with a relationship/sex addiction also have a substance abuse or drug abuse problem [5]. This comorbidity pattern supports integrated treatment approaches that address multiple addictive behaviors simultaneously.

Food Addiction

Food addiction represents an increasingly recognized clinical phenomenon. Food addiction is defined as an "eating behavior involving the overconsumption of specific foods in an addiction-like manner" [3]. Importantly, not all foods are equally addictive, therefore an investigation of the chemical characteristics that may trigger addictive behaviors is needed. Hyperpalatable foods, containing high proportion of saturated fat, sugar, artificial flavors, or sodium have been associated with addictive properties.

CBT has demonstrated effectiveness for food addiction and related eating disorders. The conclusion from the NICE review, and 2 other recent systematic reviews, is that cognitive behavioral therapy (CBT-BN) is the clear leading treatment for bulimia nervosa in adults [25]. For binge eating disorder specifically, in one of the most extensive studies involving the subject, as many as 79% of patients receiving CBT for binge eating disorder were no longer showing binge eating behaviors after 20 weeks of sessions, and 59% were still in successful recovery one year after completing therapy [25].

Effective treatment for food addiction involves multiple components. Key components of a comprehensive treatment plan may include individualized care plans tailored to each client's unique triggers, emotional attachments, and nutritional needs; evidence-based therapies, such as cognitive behavioral therapy (CBT), dialectical behavior therapy (DBT), and mindfulness-based interventions; nutritional education and guidance on balanced eating, portion control, and mindful eating practices [3].

Treatment for food addiction requires unique adaptations not found in substance use treatment. Since we have to eat to get through the day, it is impossible to go 'cold turkey' on eating alone. Therefore, we help you to develop healthier patterns where you simply eat enough food to meet your daily energy requirements [3].

Mindfulness-based interventions show particular promise for food addiction. These approaches, such as mindfulness-based cognitive therapy (MBCT) and mindfulness-based eating awareness training (MB-EAT), promote present moment awareness of thoughts, feelings, and physical sensations related to eating. This heightened mindfulness helps individuals develop a more balanced, non-judgmental relationship with food and their bodies.

Specialized populations require tailored approaches. Research with post-bariatric surgery patients found that thirteen percent of

patients exceeded the cut-off for food addiction at 1-year post-surgery, and this subgroup of patients reported greater binge eating characteristics and psychiatric distress compared to patients without food addiction. Importantly, brief telephone-based CBT showed promise in this population [26].

Sex Addiction

Sex addiction, now more commonly termed Compulsive Sexual Behavior Disorder (CSBD), has gained recognition in recent years. Compulsive sexual behavior, otherwise known as sexual addiction, is an emerging psychiatric disorder that has significant medical and psychiatric consequences [27]. The terminology remains evolving, as you may hear healthcare professionals call this compulsive sexual behavior, problematic sexual behavior, hypersexuality, hypersexuality disorder, sexual compulsivity or sexual impulsivity.

The research base has expanded dramatically in recent decades. Research related to sexual addiction and compulsive sexual behaviors has proliferated in recent years. A comprehensive systematic review revealed 415 empirical studies of compulsive sexual behavior in the past 25 years, though the majority of studies made use of cross-sectional designs in non-clinical populations [28].

Despite the growth in research, treatment evidence remains limited. At present, there is almost no empirical basis for the treatment of compulsive sexual behaviors. However, emerging evidence suggests effectiveness for certain approaches. There is first evidence for the effectiveness of treatment approaches such as cognitive behavior therapy [28].

Twelve-step programs are commonly used but have limited empirical support. A systematic review found inconclusive results, and we found only three articles of high quality, where the samples were composed mainly by men, which indicate that peer-therapy in combination with individual therapy might be beneficial [28].

Multiple pharmacological approaches have been studied. The main pharmacological approaches to treating CSBD have included opioid antagonists (naltrexone and nalmefene), selective serotonin reuptake inhibitors (paroxetine, citalopram, fluoxetine, and sertraline), mood stabilizers (topiramate), tricyclic antidepressants (clomipramine), serotonin antagonist and reuptake inhibitors (nefazodone), and N-acetylcysteine. However, these agents have a positive response rate of 50-90%. They decrease the drive for excessive sexual behaviour without decreasing the drive for healthy behaviour [27].

An important treatment consideration involves the goal of intervention. Three studies explicitly reported that the aim of the treatment was abstinence, although abstinence was differently defined. However, given the natural role of sexuality in human life, a controlled use may be an appropriate treatment aim [28].

Sex addiction frequently co-occurs with other conditions. Nearly 90% of individuals with a sex or relationship disorder come from dysfunctional families, and comprehensive treatment must address these underlying factors [5].

Digital Age Process Addictions

Internet and gaming addictions represent rapidly growing concerns, particularly among younger populations. More males (62.7%) than females (37.3%) engage in video gaming, and concerning patterns are emerging globally, with Iran having the highest rate of video game addiction in the world with 22.8% of the population having an issue with video gaming [29].

These behavioral addictions are associated with significant mental health concerns. Depression, suicidal ideation, and anxiety have been associated with video gaming [29]. Additionally, research suggests that smartphone addiction is associated with physical and mental health problems, including depression, anxiety, musculoskeletal problems, and poor sleep.

The neurobiological basis for considering gaming a legitimate addiction is established. According to the American Psychiatric Association, the brain of a person with gaming disorder, for example, reacts to gaming in the same way a person with a substance uses disorder's brain reacts to their substance of choice [30].

Web-based interventions show promise for digital addictions. Web-based treatments for online behavioral addictions use an array of mechanisms to deliver cognitive and behavioral change techniques [31]. Web-based treatments demonstrate promise for short-term reduction in symptoms, duration, or frequency of online addictive behaviors. However, there is limited evidence on the effectiveness of web-based treatments over the longer term due to the absence of controlled trials [31].

Effective treatment often involves multiple modalities. The network meta-analysis results demonstrated that the top four interventions were: rTMS + CBT, drug + others, rTMS, and electro-acupuncture + CBT [32]. This suggests that combination approaches may be particularly effective for internet addiction.

Gambling Addiction

Gambling disorder represents one of the most recognized process addictions. The World Health Organization (WHO) reports that the prevalence of problematic gambling or a gambling addiction is as high as 6% of the global population [6]. Among college students, the prevalence is even higher, with up to 23% of college students gamble weekly [6].

Gambling addiction follows patterns similar to substance use disorders. Gambling addiction, also called problem gambling or gambling disorder, is an addiction that refers to any and all types of gambling or choices related to gambling that endanger or compromise a person's life, job, or family [6]. The condition may be characterized by behaviors that include placing bets more frequently, betting larger amounts than intended, "chasing" losses

by continually betting beyond the ability to pay, feeling irritable or aggressive when unable to gamble or when losing, or being preoccupied with gambling.

Internet-based interventions for gambling show particular promise. In a systematic review by Rodda, in which 15 studies were evaluated -- eight randomized controlled trials (RCTs) and seven non-randomized trials -- positive results were apparent in certain interventions' effectiveness at reducing adverse gambling-related outcomes. Additionally, another recent meta-analysis for internet-based interventions targeting problem gambling found that these interventions reduce gambling-related symptoms with medium to large effect sizes.

Combined and Integrated Treatment Approaches

The evidence overwhelmingly supports integrated approaches over single-modality treatments. Psychological treatment is more effective when prescribed with substitute prescribing than when medication or psychological treatment is used alone, particularly for opiate users. This principle extends to both substance use and process addictions.

Many individuals present with multiple addictive behaviors simultaneously. Addiction Interaction Disorder (AID), also referred to as cross-addiction or addiction transfer, is when an individual has one addiction and then becomes addicted to something else. This pattern necessitates comprehensive assessment and treatment planning.

Process addictions particularly require attention to family and social factors. Unresolved traumas and dysfunctional family patterns around food are often drivers of addictive eating behaviors. Similarly, addressing social determinants becomes crucial, as educating providers on the social determinants of addiction would help work against the bias and stereotyping that abounds in clinical practice.

Technology-Enhanced and Digital Interventions

Digital interventions represent a growing frontier in addiction treatment. Web-based treatments have the potential to address low rates of help seeking due to their convenience, accessibility, and capacity to address barriers to health care access (eg, shame, stigma, cost, and access to expert care) [31].

Initial results for digital interventions are promising. After-intervention evaluation indicated reduced severity (5/9, 56%), frequency (2/3, 67%), and duration (3/7, 43%). Follow-up evaluation indicated that 3 pre-post studies for gaming, gambling, and internet use demonstrated reduced severity, frequency, and duration of consumption [31].

However, significant limitations remain. However, there is limited evidence on the effectiveness of web-based treatments over the longer term due to the absence of controlled trials [31]. This highlights the need for more rigorous research designs in digital intervention studies.

Young adults represent a particularly vulnerable population for process addictions. It's not a coincidence that younger people are more likely than older ones to develop addictions, including process addictions [29]. The adolescent and young adult brain is still in development. That means that the changes in neurochemicals produced by addictive behaviors have a more powerful impact.

The developmental considerations are crucial: the parts of the brain that control emotional regulation and impulse control aren't completely mature until the mid- to late 20s [29]. Hence, young adults have fewer healthy coping skills and less ability to control their dependence on unhealthy ones.

Gender differences appear across multiple addiction types. For gaming addiction, more males (62.7%) than females (37.3%) engage in video gaming [29]. For sex addiction, a study published in JAMA Network Open revealed that as many as 7% of all women and 10.3% of all men experience significant distress or impairment in controlling sexual behaviors and urges [33].

Cultural considerations are increasingly recognized as important. The evidence suggests need for cultural differences with regard to sexual behavior should be considered. Thereby, the role of the therapists (i.e. biases through personal beliefs) should be considered [28].

Assessment and Measurement Challenges

Appropriate assessment remains challenging across process addictions. For food addiction, one or more validated instruments for the quantification of this disorder's severity are being developed [24]. For sexual addiction, the Sexual compulsivity scale is most commonly used for gauging the presence of sexual addiction. It includes both the key features of addiction (impaired control and harmful consequences). It is a 10-item scale which scores from 1-4. The cut off value is 24 [27].

The development of diagnostic criteria remains challenging. No clear diagnostic criterion has been established with validity for behavioral addictions. Sexual addiction, including addiction to pornography is not included as a separate entity because of a lack of strong empirical evidence in this area [30].

Treatment effectiveness varies significantly by the target of addiction:

Opioids: MOUD represents the clear first-line treatment, with the evidence being overwhelming for methadone, buprenorphine, and naltrexone in appropriate patients [2,15-17].

Alcohol: Combination approaches using both pharmacotherapy (naltrexone, acamprosate) and behavioral interventions show optimal outcomes [18].

Stimulants: Primarily behavioral approaches, particularly contingency management and CBT, given the absence of FDA-approved medications [20,21].

Cannabis: Behavioral interventions represent the primary approach, with motivational interviewing and CBT showing effectiveness [19,20].

For process addictions, abstinence vs. controlled use represents a key decision point. As noted in the sex addiction literature, whether individuals should be aiming at a full abstinence from the behavior or whether a controlled use should be the long-term treatment goal requires individual assessment [28].

Treatment intensity should match problem severity. For individuals with chronic patterns, people with a persistent SUD profile require more intensive, longer-duration interventions than those with episodic patterns [22].

Implementation Science and Service Delivery

The implementation of evidence-based treatments requires significant workforce development. Current challenges include most doctors in the US lack the training to effectively address a drug addiction. This training gap extends to process addictions, where specialized knowledge is even more limited.

Innovative payment models are being developed to support integrated care. An alternative payment model that mitigates reimbursement barriers by providing patient-centered opioid addiction treatment in outpatient (non-OTP) settings. The model aims to reimburse appropriately through a one-time initial payment to cover treatment initiation followed by ongoing monthly payments for medical, psychological, and social support services.

Several quality indicators emerge from the evidence:
Treatment duration of at least 90 days for severe substance uses disorders [22]
Use of validated assessment tools
Fidelity to evidence-based protocols
Integrated care addressing co-occurring conditions
Peer support integration
Attention to social determinants of health

Emerging Therapies

Emerging pharmacological interventions show promise. A recent study in Addiction reports that GLP-1 agonist medications, such as semaglutide, which are commonly used for diabetes and weight management, may also reduce the risk of overdose and alcohol intoxication in people with substance use disorders.

For food addiction specifically, one drug to consider is approved by the FDA to aid weight loss and contains bupropion and naltrexone. It's marketed under the brand name Contrave in the United States and Mysimba in Europe. This drug directly targets some of the brain pathways involved in the addictive nature of food [3].

For internet addiction, novel approaches are being explored. rTMS + CBT, drug + others, rTMS, and electro- acupuncture + CBT showed the highest effectiveness in network meta-analysis [32]. This suggests potential for brain stimulation techniques as adjuncts to traditional treatments.

Future directions include more personalized treatment matching. ΔFosB inhibitors (drugs or treatments that oppose its action) may be an effective treatment for addiction and addictive disorders, suggesting potential for targeting specific neurobiological pathways.

Twelve-Step Treatment Programs: A Critical Analysis of the Evidence Evolution

For over 80 years, Alcoholics Anonymous (AA) has been a widespread AUD recovery organization, with millions of members and treatment free at the point of access, but it is only recently that rigorous research on its effectiveness has been conducted [7].

The most comprehensive and rigorous evaluation of 12-step program effectiveness comes from a major 2020 Cochrane systematic review and meta-analysis. This landmark study included 27 primary studies with a total of 10,565 participants, representing the most thorough examination of 12-step program effectiveness to date [7]. The significance of this Cochrane review cannot be overstated—Cochrane reviews represent the gold standard of evidence synthesis, employing the most stringent methodological criteria and comprehensive search strategies.

The evidence demonstrates that there is high quality evidence that manualized AA/TSF interventions are more effective than other established treatments, such as CBT, for increasing abstinence [7]. The evidence suggests that 42% of participants participating in AA would remain completely abstinent one year later, compared to 35% of participants receiving other treatments including CBT [8]. The study found that manualized AA/TSF interventions led to higher rates of continuous abstinence than other established treatments at 12, 24 and 36 months [8].

Project MATCH, one of the largest and most expensive clinical trials in addiction treatment history, examined three of the most common evidence-based models for alcohol use disorder: cognitive behavioral therapy, motivational enhancement therapy, and TSF [34]. Overall, the study found that patient matching did not change outcomes and that all models were equally effective [35]. However, those with low levels of psychiatric comorbidities treated with TSF experienced higher rates of days completely abstinent. Additionally, those who received TSF had higher rates of complete abstinence at year one [35].

The effectiveness of TSF depends significantly on proper implementation. The effectiveness of Twelve-Step Facilitation interventions in the treatment of alcohol use disorder is strong. TSFs produce outcome benefits as good or possibly better than other active treatments. It is particularly helpful and has clearer advantages when it comes to increasing rates of continuous abstinence and full sustained substance use disorder remission [35].

Twelve-step programs offer remarkable cost-effectiveness compared to professional treatment. Membership in 12-step mutual aid programs is free. There are no membership dues or fees, no professionals, and the only requirement for membership is a desire to stop drinking or using [35]. Research demonstrates

substantial healthcare savings: In their systematic review, Kelley and colleagues demonstrated higher healthcare cost savings for individuals treated with AA or Twelve Step Facilitation (TSF) compared to those treated in an outpatient facility utilizing CBT, or no AA/TSF exposure.

Policy Implications

Prevention strategies require attention to multiple risk behaviors. There is some, albeit limited, evidence that programmes to reduce multiple risk behaviours in school children can be effective, the most promising programmes being those that address multiple domains of influence on risk behaviour. Additionally, intervening in the mid-childhood school years may have an impact on later risk behaviour, but further research is needed to determine the effectiveness of this approach.

Addressing stigma remains crucial for treatment engagement. Stigma or the fear of stigma may stop someone from sharing their health condition and prevent them from seeking the health or behavioral health services and support services they need. Healthcare systems must work to recognize that opioid use disorder is a medical condition, not a moral failing, and this principle extends to all addictive disorders.

The public health implications are substantial. One-third of inpatient hospital costs and 20% of all deaths in the US every year are the result of untreated addictions and risky substance use. The economic impact is enormous, as the massive overall economic cost to society is greater than the cost of diabetes and all forms of cancer combined.

Conclusion

The evidence base for addiction treatment has matured dramatically over the past two decades, providing clinicians with robust guidance for treating both substance use disorders and process addictions. Several key principles emerge from this comprehensive review:

First, combined pharmacological and behavioral interventions represent the gold standard for addiction treatment when pharmacotherapy is available [1]. These findings suggest that best practices in addiction treatment should include pharmacotherapy plus CBT or another evidence-based therapy, rather than usual clinical management or nonspecific counseling services.

Second, the evidence supports the validity of process addictions as legitimate clinical conditions requiring specialized treatment [23,24]. The neurobiological similarities between substance use disorders and behavioral addictions provide a strong rationale for adapting evidence-based interventions across addiction types.

Third, treatment should be individualized based on addiction type, severity, co-occurring conditions, and patient preferences, while maintaining fidelity to evidence-based protocols. No single intervention works for all individuals, but multiple effective options exist for most presentations.

Fourth, the chronic nature of addiction requires long-term management strategies rather than acute treatment models [22]. The reconceptualization of substance uses disorders (SUD) as a chronic phenomenon calls for a paradigm shift in service provision.

Fifth, implementation challenges remain substantial despite strong evidence for effective treatments [10]. Whilst effective treatments exist for substance use and alcohol use disorders, they are not commonly practised. Addressing these implementation gaps represents one of the most pressing challenges in addiction medicine.

The field continues to evolve rapidly, with emerging approaches like ACT showing promise [9], technological innovations offering new delivery mechanisms [31,32], and precision medicine approaches on the horizon. However, the fundamental principle remains: addiction treatment is most effective when it addresses the biological, psychological, and social aspects of the disorder through comprehensive, evidence-based approaches that are sustained over time and adapted to individual needs.

Appendix: 12-Step Treatment Programs Efficacy- A Critical Analysis of the Evidence Evolution

Historical Context

The journey of 12-step programs from grassroots mutual aid to evidence-based treatment represents one of the most remarkable transformations in addiction medicine. When Alcoholics Anonymous emerged in the 1930s, it operated entirely outside the medical establishment, relying on spiritual principles and peer support rather than professional intervention. For over 80 years, Alcoholics Anonymous (AA) has been a widespread AUD recovery organization, with millions of members and treatment free at the point of access, but it is only recently that rigorous research on its effectiveness has been conducted [7].

This historical resistance to scientific scrutiny created a unique paradox in addiction treatment: the most widely available intervention lacked the empirical foundation that characterized other medical treatments. The reasons for this research gap were multifaceted, including the anonymous nature of 12-step membership, philosophical differences between the spiritual approach of AA and the medical model, and methodological challenges in studying peer-led interventions. However, the past two decades have witnessed a dramatic shift, with researchers developing innovative methodologies to evaluate 12-step effectiveness while respecting the program's foundational principles.

From Skepticism to Rigorous Evidence

The transformation in 12-step research methodology represents a fascinating case study in adapting scientific inquiry to complex social interventions. Early attempts to study AA effectiveness were hampered by fundamental methodological challenges: how do you randomize participants to a program that emphasizes voluntary participation? How do you maintain scientific objectivity when studying a program that explicitly embraces subjective spiritual

transformation? How do you measure outcomes in populations that value anonymity?

The breakthrough came with the development of Twelve-Step Facilitation (TSF) as a professionally delivered intervention. This innovation allowed researchers to study the active ingredients of 12-step involvement while maintaining scientific rigor. TSF represents a structured, professional intervention designed to link individuals to 12-step mutual help organizations, creating a bridge between the clinical and peer support worlds that had previously operated in parallel [35].

The most comprehensive and rigorous evaluation of 12-step program effectiveness comes from a major 2020 Cochrane systematic review and meta-analysis. This landmark study included 27 primary studies with a total of 10,565 participants, representing the most thorough examination of 12-step program effectiveness to date [7]. The significance of this Cochrane review cannot be overstated—Cochrane reviews represent the gold standard of evidence synthesis, employing the most stringent methodological criteria and comprehensive search strategies.

Unpacking the Evidence

The numerical findings from recent systematic reviews tell a compelling story, but understanding their clinical significance requires deeper analysis. The evidence demonstrates that there is high quality evidence that manualized AA/TSF interventions are more effective than other established treatments, such as CBT, for increasing abstinence [7]. This finding represents a seismic shift in our understanding of treatment effectiveness hierarchies.

When we examine the specific outcomes, the data reveals nuanced but clinically meaningful differences. The evidence suggests that 42% of participants participating in AA would remain completely abstinent one year later, compared to 35% of participants receiving other treatments including CBT [8]. While a seven-percentage point difference might seem modest, in the context of addiction treatment—where relapse rates traditionally exceed 60%—this represents a substantial clinical advance. Moreover, this difference becomes even more significant when considered alongside the cost and accessibility advantages of 12-step programs.

The study found that manualized AA/TSF interventions (interventions that used standardized procedures) led to higher rates of continuous abstinence than other established treatments at 12, 24 and 36 months [8]. This sustained effectiveness over extended timeframes addresses one of the most challenging aspects of addiction treatment: maintaining long-term recovery. The fact that 12-step advantages actually increase over time suggests that the program's emphasis on ongoing involvement and lifestyle change provides benefits that extend far beyond the acute treatment phase.

Paradigm-Shifting Findings

Project MATCH, one of the largest and most expensive clinical trials in addiction treatment history, deserves detailed examination for its profound impact on treatment paradigms. The study examined three of the most common evidence-based models for alcohol use disorder: cognitive behavioral therapy, motivational enhancement therapy, and TSF [34]. The original hypothesis underlying Project MATCH was that certain patients would respond better to specific treatments—hence the name "MATCH"—reflecting the field's assumption that treatment matching would optimize outcomes.

However, the study's most significant finding challenged this fundamental assumption. Overall, the study found that patient matching did not change outcomes and that all models were equally effective [34]. This finding was initially interpreted as disappointing, as it seemed to suggest that the sophisticated patient-treatment matching strategies the field had developed were ineffective. However, deeper analysis revealed more nuanced and ultimately more encouraging findings.

Two important exceptions emerged from the general pattern of equivalent effectiveness. Those with low levels of psychiatric comorbidities treated with TSF experienced higher rates of days completely abstinent. This finding suggests that 12-step programs may be particularly beneficial for individuals whose primary challenge is substance use rather than complex psychiatric comorbidity. Additionally, those who received TSF had higher rates of complete abstinence at year one [34], indicating that the 12-step approach may be especially effective for individuals seeking total abstinence rather than harm reduction.

Perhaps most importantly, Project MATCH demonstrated that TSF—a professionally delivered intervention designed to connect individuals with peer support—could achieve outcomes equivalent to or better than intensive individual psychotherapy. This finding has profound implications for treatment accessibility and cost-effectiveness, suggesting that the combination of professional guidance and peer support may be as effective as purely professional interventions.

Bridging Professional and Peer Support

The development of Twelve-Step Facilitation as a professional intervention represents a remarkable innovation in treatment delivery. TSF addresses a fundamental challenge in addiction treatment: how to systematically connect individuals with ongoing community support while maintaining professional oversight and accountability. The evidence for Twelve-Step Facilitation interventions in the treatment of alcohol use disorder is strong. TSFs produce outcome benefits as good or possibly better than other active treatments. It is particularly helpful and has clearer advantages when it comes to increasing rates of continuous abstinence and full sustained substance use disorder remission [35].

The structured nature of TSF interventions allows for systematic evaluation while preserving the essential elements that make 12-step programs effective. Key characteristics of effective TSF include 12 to 15 weekly individual sessions delivered over 3-4 months, a structured, manual-driven approach, strong emphasis on abstinence as treatment goal, integration of AA readings and

practical tasks, and active facilitation of community meeting attendance. This systematic approach ensures that individuals receive consistent guidance in navigating 12-step involvement while maintaining the personal choice and autonomy that are central to 12-step philosophy.

Economic Implications

The economic implications of 12-step program effectiveness cannot be overstated, particularly in healthcare systems struggling with rising costs and limited resources. Twelve-step programs offer remarkable cost-effectiveness compared to professional treatment. Membership in 12-step mutual aid programs is free. There are no membership dues or fees, no professionals, and the only requirement for membership is a desire to stop drinking or using [35].

This cost structure creates unprecedented opportunities for sustainable treatment delivery. Research demonstrates substantial healthcare savings: In their systematic review, Kelley and colleagues demonstrated higher healthcare cost savings for individuals treated with AA or Twelve Step Facilitation (TSF) compared to those treated in an outpatient facility utilizing CBT, or no AA/TSF exposure [35]. These savings result not only from the absence of professional fees but also from improved health outcomes that reduce the need for emergency medical care, hospitalization, and other costly interventions.

The economic model of 12-step programs also provides sustainability that professional treatment systems struggle to achieve. While professional treatment systems face ongoing challenges with funding, staff turnover, and capacity limitations, 12-step programs operate on a self-sustaining model where recovery itself generates the human resources needed to help others. This creates a renewable resource that grows stronger as more individuals achieve recovery.

The expansion of 12-step programs beyond their American origins provides valuable insights into the universal versus culturally specific elements of recovery support. The effectiveness extends to behavioral addictions through specialized 12-step programs. A comprehensive systematic review of 55 articles examined twelve-step mutual-help (TSMH) groups excluding Alcoholics Anonymous. The most studied TSMH group were Gamblers Anonymous (28% of the 47 studies), Narcotics Anonymous (26%), Double Trouble in Recovery (15%), Overeaters Anonymous (19%) and TSMH groups for compulsive sexual behaviors (11%) [36].

This diversification demonstrates the adaptability of 12-step principles across different addictive behaviors and cultural contexts. The fact that 68% of studies were conducted in North America, 17% in Middle East, 11% in the European Union and 4% in Australia suggests both the global reach of 12-step programs and the need for more diverse research populations [36]. The success of 12-step adaptations across different addictive behaviors supports the theoretical foundation that addiction represents a common underlying process that can be addressed through similar approaches.

Mechanisms of Action

The scientific understanding of why 12-step programs work has evolved considerably, moving beyond simple correlation to identifying specific mechanisms of action. Research has identified several key mechanisms through which 12-step programs achieve their effects, including social support and community development, sponsorship and mentoring relationships, spiritual and philosophical framework, and behavioral structure and accountability.

The cornerstone of 12-step programs is the meetings. Members are encouraged to show up regularly to support and encourage themselves and one another, to share their experiences and to listen and learn from others' valuable experiences as a way to grow and heal [35]. This regular community interaction provides multiple therapeutic elements: reduction of isolation and shame, normalization of recovery struggles, access to practical advice and coping strategies, positive peer pressure and accountability, and modeling of successful recovery behaviors.

The sponsorship system represents perhaps the most innovative aspect of 12-step programs. New members in 12-step programs are encouraged to find a sponsor — this is a more experienced member who can help guide you through the 12 steps, while offering advice, support and accountability through the process [35]. This creates a structured mentoring relationship that provides individualized support within the group context. The sponsor relationship offers several unique advantages: one-on-one guidance from someone with lived experience, accountability without professional judgment, flexibility to meet individual needs and preferences, and gradual development of leadership skills as individuals eventually become sponsors themselves.

Common Criticisms

Scientific integrity requires honest examination of limitations alongside strengths. The 12-step research literature, while increasingly robust, still faces several important limitations that must be acknowledged. Challenges remain in engaging certain populations. For example, among adults with co-occurring disorders, patients attended on average, only 5 of 12 Twelve-Step Facilitation (TSF) sessions compared to 8 of 12 among substance use disorder-only patients in Project MATCH [34].

This attendance pattern highlights the ongoing challenge of engaging individuals with complex presentations in community-based interventions. Co-occurring disorders often require intensive professional support that may not be readily available in traditional 12-step meetings. However, the development of specialized 12-step programs like Double Trouble in Recovery for individuals with mental health and substance use disorders represents an important adaptation that addresses these concerns.

Cultural and demographic representation in research samples also requires attention. Most research has been conducted in North

America (68% of studies), with limited representation from other regions. Additionally, research samples have been composed mainly by men in many studies [28]. These limitations suggest the need for more diverse research populations and culturally adapted interventions.

The spiritual component of 12-step programs, while central to their effectiveness for many participants, may create barriers for individuals who are uncomfortable with spiritual or religious concepts. However, the development of secular alternatives and the increasing emphasis on spirituality as broadly defined rather than specific religious doctrine has helped address some of these concerns.

The Collaborative Model

The evolution of 12-step programs from alternative to professional treatment toward integration represents one of the most significant developments in addiction medicine. 12-step groups can serve as an adjunctive service to professional addiction treatment to extend treatment benefits; and for some, 12-step groups may be the primary mode of intervention [36]. This collaborative model recognizes that different individuals may benefit from different combinations of professional and peer support.

The integration model offers several advantages over either approach alone. Professional treatment can provide medical management, psychiatric care, and specialized interventions for complex presentations, while 12-step programs offer ongoing community support, practical guidance, and long-term recovery reinforcement. The combination addresses both the acute medical aspects of addiction and the long-term lifestyle changes required for sustained recovery.

Research on this integration demonstrates its effectiveness. The effectiveness of TSF depends significantly on proper implementation. Research shows that when therapists, on average, demonstrating about 90% of the identified "ingredients" of TSF each session, outcomes are optimized [34]. This finding underscores the importance of proper training and supervision for professionals delivering TSF interventions.

Adapted Approaches

The expansion of 12-step principles to special populations provides important insights into both the universal and specific elements of effective recovery support. Research demonstrates effectiveness for individuals with dual diagnoses. A study of 121 individuals with alcohol use disorder (AUD) and co-occurring psychotic (18%), bipolar (36%), or major depressive disorder (46%) found that compared to treatment as usual (TAU) patients, Twelve-Step Facilitation (TSF) patients were more likely to attend a 12-step meeting during treatment (66% vs. the control group) [34].

This finding is particularly significant given the traditional challenges of engaging individuals with severe mental illness in community-based interventions. The success of adapted TSF approaches suggests that the barriers to 12-step involvement among individuals with mental health conditions may be more related to lack of appropriate introduction and support rather than fundamental incompatibility.

The adolescent and young adult population presents unique opportunities and challenges. While most research focuses on adults, emerging evidence supports effectiveness in younger populations, though adolescents and other youth warrant greater attention in the study and implementation of TSFs [35]. The neurobiological differences in developing brains, different social contexts, and distinct developmental tasks of adolescence all suggest the need for age-appropriate adaptations of 12-step principles.

Future Research Directions

The robust evidence base for 12-step effectiveness opens new avenues for research and practice development. Key areas for continued investigation include mechanisms of change specific to different populations, optimal integration strategies with professional treatment, cultural adaptations for diverse populations, effectiveness across different addictive behaviors, and long-term follow-up studies examining sustained outcomes.

The development of technology-enhanced 12-step interventions represents a particularly promising area. Online meetings, digital sponsorship connections, and app-based step work all offer opportunities to increase accessibility while maintaining the core elements that make 12-step programs effective. The COVID-19 pandemic accelerated adoption of virtual 12-step meetings, providing natural experiments in digital delivery that merit systematic evaluation.

Research on optimal dosage and intensity of 12-step involvement could help individualize recommendations. While the traditional suggestion of "90 meetings in 90 days" reflects the program's emphasis on intensive early involvement, systematic research could help identify the minimum effective dose for different populations and the optimal progression of involvement over time.

Clinical and Policy Implications

The evidence base for 12-step effectiveness has profound implications for clinical practice and health policy. For clinicians, the evidence clearly supports including 12-step referrals and facilitation as standard practice. The scientific literature consistently demonstrates 12-step interventions to be equal in efficacy compared to common evidence-based models, and sometimes they perform even better than the intervention for which they are compared [35].

This evidence supports several specific clinical recommendations: routine assessment of 12-step attitudes and barriers during intake; systematic provision of TSF for appropriate patients; training for clinical staff in 12-step principles and referral procedures; development of partnerships with local 12-step communities; and inclusion of 12-step involvement in treatment planning and outcome monitoring.

From a policy perspective, the evidence supports increased investment in TSF training, integration of 12-step programs into healthcare systems, removal of barriers to 12-step participation in treatment settings, and recognition of 12-step involvement as an evidence-based treatment component worthy of reimbursement consideration.

The Science is Clear

The transformation of 12-step programs from grassroots mutual aid to evidence-based treatment represents one of the most remarkable developments in addiction medicine. The science is out regarding 12-step effectiveness, with high-quality systematic reviews demonstrating clear benefits for abstinence outcomes, particularly when delivered through structured facilitation approaches [35].

The evidence reveals that 12-step programs offer a unique combination of effectiveness, accessibility, and sustainability that is unmatched by other interventions. The combination of peer support, spiritual framework, structured approach, and widespread availability makes 12-step programs uniquely valuable in the addiction treatment landscape. For clinicians, the evidence clearly supports including 12-step referrals and facilitation as standard practice, while for individuals seeking recovery, 12-step programs offer a proven pathway with strong empirical backing and remarkable accessibility.

Perhaps most importantly, the evidence demonstrates that effective addiction treatment need not be expensive or technologically sophisticated. The power of human connection, shared experience, and mutual support—when properly structured and facilitated—can achieve outcomes that rival the most intensive professional interventions. This finding offers hope not only for individuals seeking recovery but for healthcare systems struggling to provide effective, accessible, and sustainable addiction treatment services.

References

1. Ray LA, Meredith LR, Kiluk BD, et al. Combined pharmacotherapy and cognitive behavioral therapy for adults with alcohol or substance use disorders: a systematic review and meta-analysis. JAMA Netw Open. 2020; 3: e208279.
2. Mattick RP, Breen C, Kimber J, et al. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. Cochrane Database Syst Rev. 2009; 3: CD002209.
3. New Choices Treatment Center. Food Addiction. Phoenix: New Choices Treatment Center. 2024. https://newchoicestc.com/blog/food-addiction.
4. Grubbs JB, Kraus SW, Perry SL, et al. Self-reported addiction to pornography in a nationally representative sample: the roles of use habits, religiousness, and moral incongruence. J Behav Addict. 2019; 8: 88-93.
5. Caron Treatment Centers. Caron's Stats on Process Addiction Demographics. Wernersville: Caron Treatment Centers. 2024. https://www.caron.org/addiction-101/process-addictions/statistics-demographics.
6. Ocean Recovery Centre. Guide to Process Addictions. Ocean Recovery Centre. 2017. https://oceanrecoverycentre.com/2017/08/guide-process-addictions.
7. Kelly JF, Humphreys K, Ferri M, et al. Alcoholics Anonymous and other 12-step programs for alcohol use disorder. Cochrane Database Syst Rev. 2020; 3: CD012880.
8. Cochrane Library. New Cochrane Review finds Alcoholics Anonymous and 12-Step Facilitation programs help people to recover from alcohol problems. Cochrane; 2020. https://www.cochrane.org/news/new-cochrane-review-finds-alcoholics-anonymous-and-12-step-facilitation-programs-help-people.
9. Grubbs JB, Perry SL, Wilt JA, et al. Acceptance and commitment therapy for addictive behaviors: a systematic review and meta-analysis. Compr Psychiatry. 2024; 131: 152464.
10. Dale E, Kelly PJ, Lee KSK, et al. Implementation of evidence-based practice for alcohol and substance use disorders: protocol for systematic review. Syst Rev. 2020; 9: 25.
11. Cleveland Clinic. Addiction: What It Is, Causes, Symptoms, Types & Treatment. Cleveland: Cleveland Clinic. 2017. https://my.clevelandclinic.org/health/diseases/6407-addiction.
12. Wikipedia contributors. Addiction. Wikipedia, The Free Encyclopedia. 2025. https://en.wikipedia.org/wiki/Addiction.
13. Sackett DL, Rosenberg WM, Gray JA, et al. Evidence based medicine: what it is and what it isn't. BMJ. 1996; 312: 71-2.
14. Guyatt G, Rennie D, editors. Users' guides to the medical literature: a manual for evidence-based clinical practice. JAMA Press. 2002.
15. US Food and Drug Administration. Information about Medications for Opioid Use Disorder (MOUD). Silver Spring. FDA. 2023. https://www.fda.gov/drugs/information-drug-class/information-about-medications-opioid-use-disorder-moud
16. Arizona Health Care Cost Containment System. Medication Assisted Treatment (MAT). Phoenix: AHCCCS. 2021.
17. National Academy of Sciences, Engineering, and Medicine. Medications for opioid use disorder save lives. The National Academies Press. 2019.
18. Berner MM, Santander J, Wildt BT, et al. Depression and anxiety in patients receiving prescription drugs for alcohol use disorders: implications for clinical management. Front Psychiatry. 2020; 11: 586404.
19. Jhanjee S. Evidence based psychosocial interventions in substance use. Indian J Psychol Med. 2014; 36: 112-8.
20. Dennis BB, Bawor M, Naji L, et al. A review of research-supported group treatments for drug use disorders. Subst Abuse Treat Prev Policy. 2021; 16: 37.
21. Anker JJ, Carroll ME. Behavioral activation and behavioral economics: a systematic review of reinforcement-based interventions for substance use. Clin Psychol Rev. 2019; 73: 101759.
22. Baudon P, Dachew BA, Betts KS, et al. A systematic review and meta-analysis of the efficacy of the long-term treatment and support of substance use disorders. Soc Sci Med. 2021; 285: 114289.

23. American Addiction Centers. What Is Process Addiction & Types of Addictive Behaviors?. Las Vegas: American Addiction Centers. 2024. https://americanaddictioncenters.org/behavioral-addictions.
24. Yau YH, Potenza MN. Current status of evidence for a new diagnosis: food addiction a literature review. Front Psychiatry. 2022; 13: 824802.
25. Fairburn CG. Cognitive behavior therapy and eating disorders. Guilford Press. 2008.
26. Cassin SE, Sockalingam S, Wnuk S, et al. Cognitive behavioral therapy for bariatric surgery patients: preliminary evidence for feasibility, acceptability, and effectiveness. Obes Surg. 2013; 23: 1524-35.
27. Sahithya BR, Kashyap RS. Sexual addiction disorder a review with recent updates. J Psychosex Health. 2022; 4: 39-53.
28. Grubbs JB, Kraus SW, Perry SL, et al. Sexual addiction 25 years on: a systematic and methodological review of empirical literature and an agenda for future research. Clin Psychol Rev. 2020; 82: 101925.
29. Newport Institute. Common Process Addictions in Young Adults. Newport Institute. 2024. https://www.newportinstitute.com/resources/co-occurring-disorders/process-addictions-young-adults.
30. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed, text revision. American Psychiatric Association. 2022.
31. Yau YH, Potenza MN. Internet-based interventions for behavioral addictions: a systematic review. J Behav Addict. 2023; 12: 9-26.
32. Wölfling K, Müller KW, Dreier M, et al. Effects of different interventions on internet addiction: a systematic review and network meta-analysis. BMC Psychiatry. 2023; 23: 921.
33. Grubbs JB, Perry SL, Wilt JA, et al. Pornography problems due to moral incongruence: an integrative model with a systematic review and meta-analysis. Arch Sex Behav. 2019; 48: 397-415.
34. Project MATCH Research Group. Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. J Stud Alcohol. 1997; 58: 7-29.
35. Intech Open. Revisiting 12-Step Approaches: An Evidence-Based Perspective. InTech. 2021. Available from: https://www.intechopen.com/chapters/75130.
36. Bøg M, Filges T, Brännström L, et al. 12-step programs for reducing illicit drug use. Campbell Syst Rev. 2017; 13: 1-52.