



BRAIN. Broad Research in Artificial Intelligence and Neuroscience

e-ISSN: 2067-3957 | p-ISSN: 2068-0473

Covered in: Web of Science (ESCI); EBSCO; JERIH PLUS (hkdir.no); IndexCopernicus; Google Scholar; SHERPA/RoMEO; ArticleReach Direct; WorldCat; CrossRef; Peeref; Bridge of Knowledge (mostwiedzy.pl); abcdindex.com; Editage; Ingenta Connect Publication; OALib; scite.ai; Scholar9; Scientific and Technical Information Portal; FID Move; ADVANCED SCIENCES INDEX (European Science Evaluation Center, neredataltics.org); ivySCI; exaly.com; Journal Selector Tool (letpub.com); Citefactor.org; fatcat!; ZDB catalogue; Catalogue SUDOC (abes.fr); OpenAlex; Wikidata; The ISSN Portal; Socolar; KVK-Volltitel (kit.edu) 2025, Volume 16, Issue 1, pages: 115-124.

Submitted: November 2nd, 2024 | Accepted for publication: December 29th, 2024

Systematic Review: Coping Strategies Among Individuals with Drug Addiction

Raluca – Maria Rusu Andron

"Prof. Dr. Ion Chiricuță" Oncology Institute,
Cluj-Napoca, Romania
ralucandron@gmail.com
<https://orcid.org/0000-0002-5452-2619>

Romulus-Dan Nicoară*

Iuliu Hațieganu University of Medicine and
Pharmacy, Cluj-Napoca, Romania.
daninicoara@yahoo.it
<https://orcid.org/0009-0002-9979-0008>

Horia-George Coman

Iuliu Hațieganu University of Medicine and
Pharmacy, Cluj-Napoca, Romania
hcoman@umfcluj.ro
<https://orcid.org/0000-0001-8734-2852>

* Correspondence concerning this article should be addressed to
daninicoara@yahoo.it

Abstract: Drug addiction is a major global public health problem characterised by the compulsive use of drugs despite their harmful effects on various health dimensions. This systematic review examines the coping strategies used by individuals struggling with drug addiction and evaluates their effectiveness on the road to recovery. A comprehensive literature search of academic databases such as PubMed, PsycINFO, and Google Scholar identified 20 relevant studies published between 1990 and 2023. These studies were analysed to classify coping strategies into adaptive and maladaptive categories. The review highlights the importance of promoting adaptive coping strategies and addressing maladaptive behaviours in therapeutic interventions. Comprehensive treatment plans involving multiple adaptation strategies are recommended for long-term recovery. Future research should focus on identifying the most effective combinations of coping strategies and integrating them into drug addiction treatment programs.

Keywords: drug addiction; coping strategies; adaptive coping; maladaptive coping; social support.

How to cite: Rusu Andron, R. M., Nicoară, R. D., & Coman, H. G., (2025). Systematic review: Coping strategies among individuals with drug addiction. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 16(1), 115-124. <https://doi.org/10.70594/brain/16.1/8>



1. Introduction

Drug addiction is a major global public health problem affecting millions of individuals. According to the World Health Organization (WHO), substance addiction is characterised by the compulsive use of drugs despite negative effects on physical, psychological, and social health. Coping strategies, defined as methods used by individuals to manage stress and problems, play a key role in the recovery process and maintenance of abstinence among drug addicts (Lazarus, & Folkman, 1984). This systematic review examines various coping strategies used by individuals with drug addiction and evaluates their effectiveness.

2. Methodology

For this review, studies were sourced from academic databases, including PubMed, PsycINFO, and Google Scholar. The inclusion criteria were: (1) studies published between 1990 and 2023, (2) studies examining coping strategies among individuals with drug addiction, and (3) studies utilising quantitative, qualitative, or mixed methodologies. After duplicates were removed and studies that did not meet these criteria were excluded, a total of 28 articles were analysed.

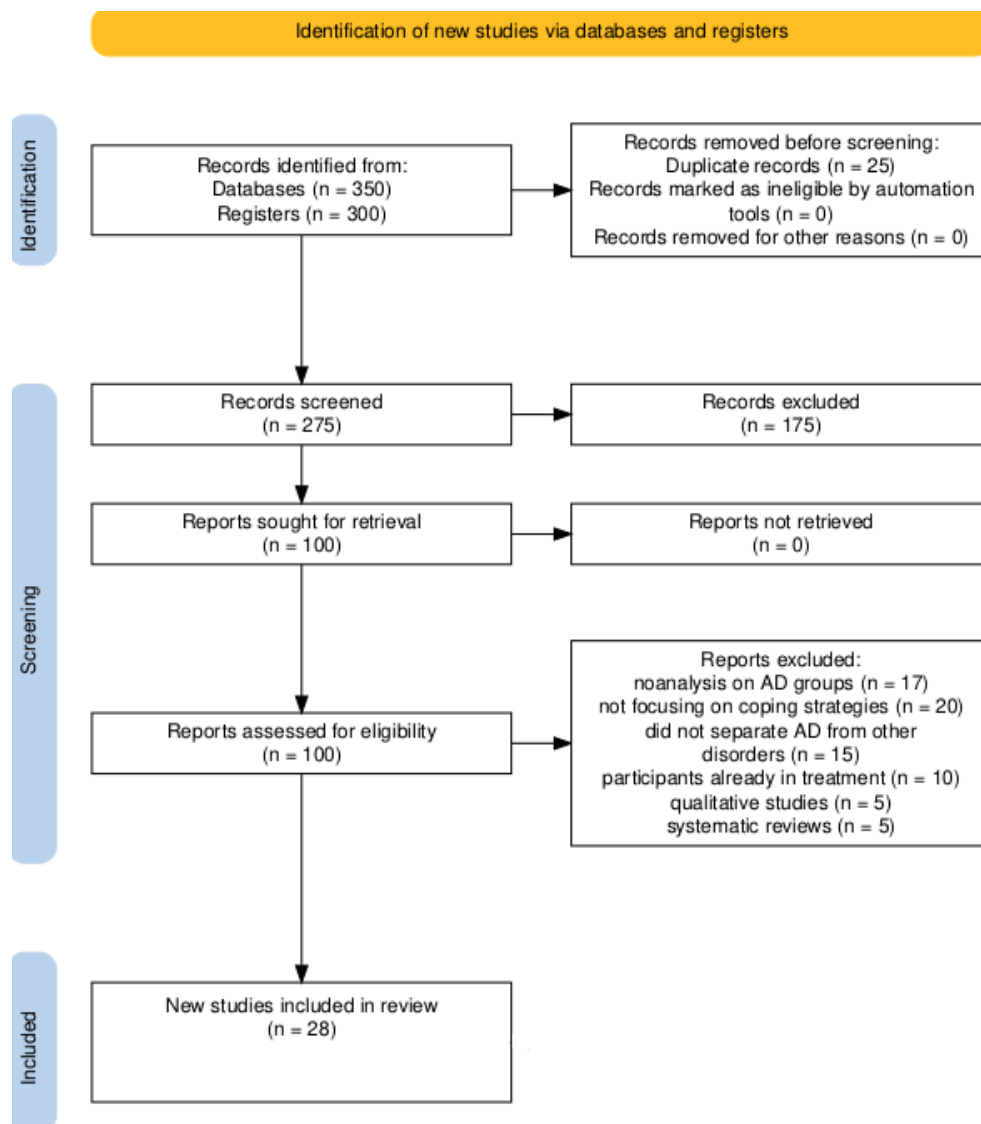


Figure 1. PRISMA flow diagram of Study Selection Process.

3. Results

The analysed studies identified different coping strategies used by individuals with drug addiction. These strategies can be divided into adaptive and maladaptive coping strategies.

3.1. Adaptive Coping Strategies

3.1.1. Social Support

Social support has been identified as an effective coping mechanism for individuals dealing with drug addiction, encompassing assistance from family, friends, support groups, and counselors. Research indicates that social support can help alleviate stress and anxiety, enhancing individuals' ability to manage difficult situations and maintain abstinence (Cohen, & Wills, 1985). Havassy, Hall, and Wasserman (1991) found that individuals with higher levels of social support exhibited lower rates of recidivism compared to those with less support. Similarly, Tracy and Wallace (2016) emphasised the crucial role of peer support groups in offering both emotional and practical assistance, significantly improving recovery outcomes.

3.1.2. Recreational and Leisure Activities

Participation in recreational activities such as sports, arts, and hobbies has been reported as beneficial. These activities not only provide a distraction from cravings but also contribute to developing a new social support network and improving overall well-being (Caldwell, & Smith, 2006). A study by Laudet & White (2010) highlighted that involvement in recreational activities reduces the risk of relapse and enhances the quality of life for individuals in recovery. Additionally, other authors found that structured leisure activities help reduce idle time, which is often associated with the risk of substance use (Smith, Milford, & Meyers, 2015). Community integration through therapeutic recreation services has been shown to improve physical, social, and psychological outcomes for individuals with various disabilities and illnesses, including those recovering from substance abuse (Stumbo et al., 2015). Incorporating structured leisure time into addiction therapy is crucial for relapse prevention. Programs that encourage clients to self-organise their leisure activities help develop the ability to structure useful leisure time, which is an essential skill for maintaining sobriety (Lacsán, Arany, & Farkas, 2017).

The programs emphasise peer support and community integration, which are pivotal in the recovery journey. Participants in such programs often experience significant reductions in substance abuse levels and improvements in mental health indicators (Shaver, Forsyth, & Meritus, 2023). The programs use social and recreational activities as alternative sources of reinforcement to decrease drug use. By participating in enjoyable activities, such as films and plays, individuals can find new ways to experience pleasure without relying on substances (Siporin, & Baron, 2012).

3.1.3. Cognitive and Behavioural Strategies (CBT)

These are among the most effective interventions for drug addiction. CBT helps individuals identify and alter dysfunctional thoughts and behaviours related to drug use (Beck, 1995). This approach includes techniques such as cognitive restructuring, problem-solving skills training, and relaxation techniques. A study by Carroll and Onken (2006) found that patients who participated in CBT sessions had higher abstinence rates compared to those who received other forms of therapy. Additionally, Kadden et al. (2007) reported that CBT significantly reduces the likelihood of relapse by equipping individuals with practical skills to manage cravings and navigate high-risk situations. Another study conducted by Nicoară, Tegzeşiu, & Popescu (2024) analyses the techniques in cognitive-behavioural therapy (CBT) and correlates them with the Transtheoretical Model of Change (TTM). This approach is valuable because it connects two essential frameworks of psychological interventions, providing useful insights for adapting CBT techniques according to the stages of the behavioural change process.

3.1.4. Mindfulness and Meditation

Mindfulness and meditation have become popular as coping strategies. They help a person become more aware of their thoughts and feelings. Instead of reacting impulsively, studies have shown that mindfulness can reduce stress and cravings. This increases the chance of maintaining abstinence (Bowen, Chawla, & Marlatt, 2014). Randomised controlled trials have found that mindfulness-based interventions are effective in reducing recidivism in addicts (Brewer, Elwafi, & Davis, 2009). Moreover, Garland et al. (2014) found that mindfulness training improves emotional regulation. This is important for long-term recovery.

3.1.5. Physical Exercise

Exercise is another adaptive coping strategy that has been shown to have promising results. Exercise not only improves physical health. But it also improves your mood and reduces stress. A study conducted by Linke and Ussher (2015) found that regular exercise was associated with lower levels of anxiety and depression in people recovering from drug addiction. Additionally, Zschucke, Heinz, & Ströhle (2012) report that exercise is a healthy alternative to medication. It provides natural consumption and reduces appetite. Integrating physical activities into substance use disorder recovery programs has been shown to reduce cravings and promote abstinence. These activities, combined with cognitive-behavioural therapy and motivational interviewing, empower individuals both mentally and physically, supporting long-term recovery (Theodorakis, Hassandra, & Panagiotounis, 2024).

3.2. Maladaptive Coping Strategies

3.2.1. Use of Alternative Substances

Some individuals turn to alcohol or other drugs to cope with stress and anxiety. This maladaptive coping can lead to the development of multiple addictions and complicate the recovery process (Gossop, Stewart, & Marsden, 2002). Another study found that individuals who use alternative substances to cope have higher rates of relapse and other health problems (McLellan et al, 2000). In addition, Poling, Rounsaville, & Gonsai (2007) found that cross-dependence is a significant barrier to recovery because it often leads to a cycle of replacing one addiction with another.

3.2.2. Avoidance and Denial

Avoidance and denial of drug use problems are common. These strategies include ignoring stressful situations or problems related to drug use that may prevent seeking help and starting the recovery process (Kress, & Hoffman, 2008). A study by Unger et al. (2009) revealed that problem avoidance is associated with greater difficulty maintaining abstinence and a higher likelihood of relapse. In addition, Miller et al. (2011) found that denial prevents individuals from recognising the severity of their addiction, thereby delaying intervention and treatment.

3.2.3. Self-Destructive Behaviours

Self-destructive behaviours, such as self-harm or engaging in risky activities, are often used as coping methods. These behaviours can exacerbate existing problems and lead to severe mental and physical health consequences (Nock, 2010). For example, a study by Sinha (2008) found that individuals with drug addiction who engage in self-destructive behaviours have higher relapse rates and mental health issues. Moreover, Hser et al. (2010) reported that self-destructive behaviours are linked to poorer treatment outcomes and increased mortality rates.

3.2.4. Emotional Suppression

Emotional suppression, or the deliberate avoidance of experiencing emotions, is another maladaptive coping strategy. A study by Gross & John (2003) found that individuals who habitually suppress their emotions are more likely to experience negative mental health outcomes, including higher levels of anxiety and depression. This is particularly problematic for individuals with drug addiction, as suppressed emotions can trigger substance use as a form of self-medication (Wills & Hirky, 1996).

3.2.5. Overworking

Some individuals cope with their addiction by immersing themselves in work to avoid dealing with their emotional and psychological issues. This form of coping can lead to burnout and increased stress, which may trigger relapse (Moos, 2007). A study by Schaubroeck et al. (2008) found that workaholism is associated with higher levels of stress and lower life satisfaction, which can negatively impact recovery.

Table 1. Synthesis of coping strategies in individuals with drug addiction.

Coping Strategy	Description	Effectiveness	Key Studies	Challenges associated with implementation
Adaptive Coping Strategies				
Social Support	Assistance from family, friends, support groups, and counselors.	Effective in reducing relapse and enhancing recovery outcomes.	Havassy, Hall, & Wasserman (1991); Tracy & Wallace (2016)	Difficulties in maintaining supportive relationships; Social stigma can prevent individuals from seeking help.
Recreational and Leisure Activities	Participation in sports, arts, and hobbies.	Reduces relapse risk, and enhances quality of life.	Laudet, & White (2010); Smith, Milford, & Meyers (2015); Stumbo et al. (2015); Lacsán, Arany, & Farkas (2017); Shaver, Forsyth, & Meritus (2023); Siporin & Baron, 2012	Limited access to structured activities; the need for financial and logistical resources.
Cognitive and Behavioural Strategies	Cognitive-behavioural therapy (CBT) to identify and alter dysfunctional thoughts and behaviours.	Increases abstinence rates, and reduces relapse likelihood.	Carroll, & Onken. (2006); Kadden et al. (2007)	Requires access to specialised therapists; It can be perceived as intense or difficult by the participants.
Mindfulness and Meditation	Practices that increase awareness of thoughts and emotions without impulsive reactions.	Reduces stress and cravings, improves emotional regulation.	Bowen, Chawla, & Marlatt (2014); Brewer, Elwafi, & Davis (2009)	It requires commitment and constant practice; difficulties in maintaining concentration for beginners.
Physical Exercise	Regular physical activity to improve physical and mental health.	Lowers anxiety and depression, reduces cravings.	Linke & Ussher (2015); Zschucke, Heinz, & Ströhle (2012); Theodorakis, Hassandra, & Panagiotounis (2024)	Lack of access to sports facilities or safe environments for exercise; low motivation of participants.

Maladaptive Coping Strategies				
Use of Alternative Substances	Using alcohol or other drugs to cope with stress and anxiety.	Leads to multiple dependencies, complicates recovery.	McLellan et al. (2000); Poling, Rounsaville, & Gonsai (2007)	Difficulties in identifying and interrupting this type of behaviour; lack of awareness of the negative impact.
Avoidance and Denial	Ignoring or denying issues related to drug use.	Hinders seeking help, increases relapse risk.	Unger et al. (2009); Miller et al. (2012)	Resistance to the acceptance of reality; the need for a safe therapeutic environment to encourage recognition of problems.
Self-Destructive Behaviours	Engaging in self-harm or risky activities.	Exacerbates problems, leads to severe health consequences.	Sinha (2008); Hser et al. (2010)	Risk of worsening mental and physical health problems; difficulties in interrupting the self-destructive cycle without specialised support.
Emotional Suppression	Deliberate avoidance of experiencing emotions.	Triggers substance use as self-medication, leads to poor outcomes.	Gross, & John (2003); Wills, & Hirky (1996)	The need for therapeutic interventions to develop healthy methods of emotional expression; reluctance to face negative emotions.
Overworking	Immersing in work to avoid emotional and psychological issues.	Leads to burnout and increased stress, triggers relapse.	Schaubroeck et al. (2008); Moos (2007)	The positive perception of work makes it difficult to recognise the negative effects.

4. Discussions

This study highlights a diverse range of coping strategies used by individuals with drug addiction, classifying them into adaptive and maladaptive types. While adaptive strategies, such as social support, cognitive behavioural therapy (CBT), mindfulness, and exercise, are associated with positive recovery outcomes, maladaptive strategies, such as emotion suppression and avoidance, pose significant challenges to maintaining abstinence.

Individuals with drug addiction employ a range of coping strategies, which can influence the recovery process either positively or negatively. Among the adaptive strategies most closely linked to positive outcomes are social support and involvement in recreational activities (Laudet, & Humphreys, 2013). Cognitive-behavioural therapy and mindfulness practices provide effective techniques for coping with stress and craving (Hayes, Strosahl, & Wilson, 2006). Additionally, physical exercise has been shown to be a beneficial strategy for improving mood and reducing appetite (Linke, & Ussher, 2015).

On the other hand, maladaptive strategies such as alternative substance use and avoidance can maintain addiction and complicate recovery. Therapeutic interventions must address these maladaptive behaviours and promote the development of adaptive coping strategies (Marlatt, & Donovan, 2005). Studies suggest that comprehensive treatment plans that include multiple adaptive strategies are more effective in promoting long-term recovery (Moos, 2007).

However, the article presents some limitations and opportunities for improvement, which can be explored in future research.

The article does not investigate how coping strategies vary by demographic factors, such as age, gender, socioeconomic status, or cultural context. Studies indicate that these variables play a key role in the adoption and effectiveness of coping mechanisms. Although there is research showing that the profile of drug users in Romania is shaped by a combination of socio-economic, legal, and health-related factors (Oroian et al., 2018).

Analysis of coping strategies highlights both the opportunities and challenges that addicts face in the recovery process. Identification of limitations, such as lack of demographic adjustment or insufficient integration of emerging technologies. It paves the way for tailored interventions and emphasises the need for doctors to use validated strategies. Therefore mental health professionals working with individuals with drug addiction should focus on:

1. Encouraging patients to engage in support groups and maintain healthy relationships with family and friends. Social support can provide a crucial support network during difficult times (Tracy, & Wallace, 2016).
2. Using cognitive-behavioural interventions to help patients develop problem-solving skills and relaxation techniques. CBT can help patients understand and change dysfunctional thoughts and behaviours (Beck, 1995).
3. Training patients in mindfulness and meditation techniques to reduce stress and cravings. Mindfulness can help patients become more aware of their thoughts and emotions and manage them more effectively (Bowen, Chawla, & Marlatt, 2014).
4. Promoting regular physical activity as a part of the recovery plan. Exercise can improve mood, reduce stress, and decrease cravings (Linke, & Ussher, 2015).
5. Identifying and modifying maladaptive coping behaviours, and providing healthy alternatives. It is important to directly address self-destructive behaviours and encourage the use of adaptive coping strategies (Sinha, 2008).
6. Developing individualised treatment plans that incorporate multiple adaptive coping strategies to support long-term recovery (Moos, 2007).

In the complex context of drug addiction, innovative interventions represent a promising direction for optimising recovery strategies. Although the current study highlights the importance of adaptive coping strategies, such as social support, cognitive behavioural therapy (CBT), and physical activities, the integration of emerging technologies can have a significant impact on the treatment process. Innovative interventions, such as virtual reality (VR), offer unique opportunities to personalise treatment.

Virtual reality (VR) is emerging as a promising tool in addiction recovery, offering innovative approaches to address the complex challenges of substance use disorders (SUDs). By creating immersive and controlled environments, VR can simulate real-life scenarios that trigger cravings, allowing individuals to practice coping strategies in a safe setting. This technology is being explored for its potential to enhance traditional treatment methods, improve patient engagement, and reduce relapse rates.

VR exposure therapy (VRET) allows patients to confront and manage cravings by simulating environments that trigger substance use urges. This method has shown promise in reducing cravings by enabling patients to practice coping strategies in a controlled setting (Bouzegaou, Kuntz, & Gothuey, 2022; Tsamitros et al., 2021).

5. Conclusions

The research presented provides a broad perspective on the coping strategies used by people experiencing drug addiction, emphasising the importance of classifying them into adaptive and maladaptive strategies. These conclusions are relevant both for the theoretical understanding of the recovery process and for the orientation of clinical interventions in this field. First, the results highlight the value of adaptive strategies, such as social support, cognitive behavioural therapy (CBT), mindfulness, and exercise, in promoting abstinence and improving quality of life. These strategies provide practical mechanisms for managing stress, cravings, and other triggers for substance use. Integrating them into treatment plans is essential to ensure long-term sustainable outcomes. On the other hand, maladaptive strategies, such as avoidance, suppression of emotions, and the use of alternative substances, are major obstacles in the recovery process. Addressing these behaviours head-on and offering healthy alternatives are essential to reduce the risk of relapse and improve overall physical and mental health.

The study also highlights some significant limitations that are worth exploring in future research. In particular, the lack of a detailed analysis of variations in coping strategies by demographic factors, such as age, gender, or cultural context, limits the applicability of the findings to diverse populations. Further research should include such variables to allow for more effective personalisation of interventions. Another promising but underexplored aspect of this study is the use of emerging technologies such as virtual reality (VR). VR offers unique opportunities to simulate trigger scenarios in a controlled environment, where patients can practice coping strategies. Integrating VR into treatment plans could increase participant engagement and the effectiveness of interventions, reducing relapse rates. Future research should assess the impact of this technology on long-term recovery.

From a practical perspective, clinical interventions should be based on an integrative approach, combining several adaptive strategies, tailored to each patient's individual needs. The development of personalised plans, which include social support, cognitive behavioural therapy, physical activities, and innovative technologies, can contribute significantly to the success of the recovery process. Coping strategies play a fundamental role in the recovery process of people with drug addiction. Implementing treatment plans that promote adaptive strategies and address maladaptive behaviours is key to achieving sustainable outcomes. This study provides a valuable starting point for future research, which should focus on diversifying and personalising interventions while integrating emerging technologies to better respond to the complex needs of this vulnerable population.

References

- Beck, A. T. (1995). *Cognitive Therapy: Basics and Beyond*. Guilford Press.
- Bouzegau, R., Kuntz, A., & Gothuey, I. (2022). Virtual reality exposure therapy for treating addictions and craving. *Revue Medicale Suisse*, 18(785), 1143-1145. <https://doi.org/10.53738/revmed.2022.18.785.1143>
- Bowen, S., Chawla, N., & Marlatt, G. A. (2014). *Mindfulness-Based Relapse Prevention for Addictive Behaviors: A Clinician's Guide*. Guilford Press. <https://psycnet.apa.org/doi/10.1016/B978-0-12-416031-6.00007-4>
- Brewer, J. A., Elwafi, H. M., & Davis, J. H. (2009). Craving to quit: Psychological models and neurobiological mechanisms of mindfulness training as treatment for addictions. *Psychology of Addictive Behaviors*, 23(2), 366-379. <https://doi.org/10.1037/a0028490>
- Caldwell, L. L., & Smith, E. A. (2006). Leisure as a context for youth development and delinquency prevention. *Australian & New Zealand Journal of Criminology*, 39(3), 398-418. <https://psycnet.apa.org/doi/10.1375/acri.39.3.398>
- Carroll, K. M., & Onken, L. S. (2006). Behavioral therapies for drug abuse. *American Journal of Psychiatry*, 162(8), 1452-1460. <https://doi.org/10.1176/appi.ajp.162.8.1452>
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357. <https://psycnet.apa.org/doi/10.1037/0033-2909.98.2.310>
- Garland, E. L., Gaylord, S. A., Boettiger, C. A., & Howard, M. O. (2014). Mindfulness training modifies cognitive, affective, and physiological mechanisms implicated in alcohol dependence: Results of a randomized controlled pilot trial. *Journal of Psychoactive Drugs*, 46(5), 453-464. <https://doi.org/10.1080/02791072.2010.10400690>
- Gossop, M., Stewart, D., & Marsden, J. (2002). Reduced injection risk and sexual risk behaviours after drug misuse treatment: results from the National Treatment Outcome Research Study. *AIDS Care*, 14(1), 77-93. <https://doi.org/10.1080/09540120220097955>
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348-362. <https://psycnet.apa.org/doi/10.1037/0022-3514.85.2.348>

- Havassy, B. E., Hall, S. M., & Wasserman, D. A. (1991). Social support and relapse: commonalities among alcoholics, opiate users, and cigarette smokers. *Addictions*, 86(9), 1366-1371. [https://doi.org/10.1016/0306-4603\(91\)90016-b](https://doi.org/10.1016/0306-4603(91)90016-b)
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2006). *Acceptance and Commitment Therapy: An Experiential Approach to Behavior Change*. Guilford Press.
- Hser, Y. I., Evans, E., Grella, C., Ling, W., & Anglin, D. (2010). Long-term course of opioid addiction. *Harvard Review of Psychiatry*, 18(1), 22-30. <https://doi.org/10.1097/hrp.0000000000000052>
- Kadden, R. M., Litt, M. D., Kabela-Cormier, E., & Petry, N. M. (2007). Abstinence rates following behavioral treatments for marijuana dependence. *Addictive Behaviors*, 32(6), 1220-1236. <https://doi.org/10.1016/j.addbeh.2006.08.009>
- Kress, V. E., & Hoffman, R. M. (2008). *Critical Incidents in Addictions Counseling*. ACA.
- Lacsán, K., Arany, Z., & Farkas, A. (2017). The role of leisure in prevention and treatment of addiction. *Leisure, Health and Well-Being: A Holistic Approach*, 115-120. http://dx.doi.org/10.1007/978-3-319-33257-4_11
- Laudet, A. B., & Humphreys, K. (2013). Promoting recovery in an evolving policy context: What do we know and what do we need to know about recovery support services? *Journal of Substance Abuse Treatment*, 45(1), 126-133. <https://doi.org/10.1016/j.jsat.2013.01.009>
- Laudet, A. B., & White, W. L. (2010). What are your priorities right now? Identifying service needs across recovery stages to inform service development. *Journal of Substance Abuse Treatment*, 38(1), 51-59. <https://doi.org/10.1016/j.jsat.2009.06.003>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer. https://doi.org/10.1007/978-1-4419-1005-9_215
- Linke, S. E., & Ussher, M. (2015). Exercise-based treatments for substance use disorders: Evidence, theory, and practicality. *The American Journal of Drug and Alcohol Abuse*, 41(1), 7-15. <https://doi.org/10.3109/00952990.2014.976708>
- Marlatt, G. A., & Donovan, D. M. (2005). *Relapse Prevention: Maintenance Strategies in the Treatment of Addictive Behaviors*. Guilford Press.
- McLellan, A. T., Lewis, D. C., O'Brien, C. P., & Kleber, H. D. (2000). Drug dependence, a chronic medical illness: Implications for treatment, insurance, and outcomes evaluation. *JAMA*, 284(13), 1689-1695. <https://doi.org/10.1001/jama.284.13.1689>
- Miller, W. R., & Rollnick, S. (2012). *Motivational Interviewing: Helping People Change*. Guilford Press.
- Moos, R. H. (2007). Theory-based active ingredients of effective treatments for substance use disorders. *Drug and Alcohol Dependence*, 88(2-3), 109-121. <https://doi.org/10.1016/j.drugalcdep.2006.10.010>
- Nicoară, R., Tegzeşiu, A., & Popescu, C. (2024). Systematic Review of CBT Techniques and their Alignment with the Transtheoretical Model Stages of Change. *BRAIN. Broad Research In Artificial Intelligence And Neuroscience*, 15(4), 253-264. [doi:http://dx.doi.org/10.70594/brain/15.4/17](http://dx.doi.org/10.70594/brain/15.4/17)
- Nock, M. K. (2010). Self-injury. *Annual Review of Clinical Psychology*, 6, 339-363. <https://doi.org/10.1146/annurev.clinpsy.121208.131258>
- Oroian, R., Lupş, M., Tudose, C., Coman, H., Nemeş, B., & Cozman, D. (2018). The risk profile of designer drugs users in Romania. *Rom J Leg Med*, 26, 51-55.
- Poling, J., Rounsaville, B., & Gonsai, K. (2007). The impact of psychiatric comorbidity and medication on treatment outcome for cocaine dependence. *The American Journal of Psychiatry*, 164(2), 214-221. <https://doi.org/10.1080/08897077.2013.812544>
- Schaubroeck, J., Shaw, J. D., Duffy, M. K., & Mitra, A. (2008). An under-met and over-met expectations model of employee reactions to merit raises. *The Journal of applied psychology*, 93(2), 424-434. <https://doi.org/10.1037/0021-9010.93.2.424>

- Shaver, S. R., Forsyth, O., & Meritus, D. (2023). Effectiveness of Therapeutic Community Rehabilitation Program for Drug Abuse in Social Institutions. *Law and Economics*, 17(3), 203-217. <https://doi.org/10.35335/laweco.v17i3.45>
- Sinha, R. (2008). Chronic stress, drug use, and vulnerability to addiction. *Annals of the New York Academy of Sciences*, 1141(1), 105-130. <https://doi.org/10.1196/annals.1441.030>
- Siporin, S., & Baron, L. (2012). Incorporating nondrug social & recreational activities in outpatient chemical dependency treatment. *International Journal of Mental Health and Addiction*, 10, 97-106. <https://psycnet.apa.org/doi/10.1007/s11469-010-9302-5>
- Smith, J. E., Milford, J. L., & Meyers, R. J. (2015). The community reinforcement approach. In S. T. Walters, F. Rotgers, & J. Norcross (Eds.), *Practicing harm reduction psychotherapy: An alternative approach to addictions* (pp. 190-217). Guilford Press.
- Stumbo, N. J., Wilder, A., Zahl, M., DeVries, D., Pegg, S., Greenwood, J., & Ross, J. E. (2015). Community Integration: Showcasing the Evidence for Therapeutic Recreation Services. *Therapeutic Recreation Journal*, 49(1).
- Theodorakis, Y., Hassandra, M., & Panagiotounis, F. (2024). Enhancing Substance Use Disorder Recovery through Integrated Physical Activity and Behavioral Interventions: A Comprehensive Approach to Treatment and Prevention. *Brain Sciences*, 14(6), 534. <https://doi.org/10.3390/brainsci14060534>
- Tracy, K., & Wallace, S. P. (2016). Benefits of peer support groups in the treatment of addiction. *Substance Use & Misuse*, 51(2), 203-213. <https://doi.org/10.2147/SAR.S81535>
- Tsamitros, N., Sebold, M., Gutwinski, S., & Beck, A. (2021). Virtual reality-based treatment approaches in the field of substance use disorders. *Current Addiction Reports*, 8, 399-407. <https://doi.org/10.1007/s40429-021-00377-5>
- Unger, J. B., De Luca, S. M., Anderson, S. J., & Ritt-Olson, A. (2009). A comparison of alternative and traditional after-school programs: An exploration of the differential effects of prevention programming on adolescent smoking. *Substance Use & Misuse*, 44(5), 709-727.
- Wills, T. A., & Hirky, A. E. (1996). Coping and substance use: A theoretical model and review of the evidence. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 279-302). Wiley.
- Zschucke, E., Heinz, A., & Ströhle, A. (2012). Exercise and physical activity in the therapy of substance use disorders. *Scientific World Journal*, 2012, 901741. <https://doi.org/10.1100/2012/901741>