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Research Paper

Addiction Reexamined: An Interdisciplinary Review of Neurobiological, Diagnostic, And Therapeutic Perspectives

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ABSTRACT

Understanding addiction continues to challenge researchers and clinicians alike due to its complex underlying neurobiological, psychological, and social factors. Although the conceptualization of addiction has changed significantly over time, its definitions and treatments are still up for debate. This review explores addiction through its historical development, the evolution of diagnostic frameworks, and key psychological factors in treatment, using a narrative approach to synthesize information from peer-reviewed literature published over the past two decades. It examines different types of addiction, the impact of contextual stressors, and traces the shift from a moralistic view to a biopsychosocial model. It also points out gaps in research for improved treatment outcomes. Furthermore, it suggests investigating Interoceptive Exposure, paving the way for new techniques to treat addictions.

Keywords: *Addiction, Substance Use, Behavioral and Non-Behavioral Addiction, DSM, ICD, Biopsychosocial Model, Interoceptive Exposure*

Addiction comes from a Latin word – 'addicere', meaning to 'give over' or 'to devote'. It refers to a complex, pervasive behavior where an individual shows compulsive engagement with a pleasurable stimulus for a rewarding experience, despite harmful consequences. Addiction can be both substance-related (e.g., alcohol, opioids) and behavioral (e.g., gambling, internet use), affecting the health, well-being, life engagement, and social functioning of individuals across ages, genders, and socioeconomic backgrounds (Fluyau et al., 2024; Volkow & Boyle, 2018). It presents as a major public health concern, exerting a heavy toll on families and societies alike worldwide.

In recent years, scholars have started to reconsider addiction as a chronic relapsing disorder due to the intricate neurobiological and sociocultural factors influencing it. This view is backed by interdisciplinary literature which sees addiction as more than just a compulsive compensatory response to a behavior that damages the brain itself. Once considered a moral failure, addiction is now viewed through an integrated biopsychosocial lens that has substantially changed the way addiction is understood and treated. Different frameworks, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the

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International Classification of Diseases (ICD), disagree on the definition and inclusion of addiction despite advancements and changes in standards. This lack of agreement hinders effective treatment. Although diverse approaches have explored addiction from different angles, models of care that more thoughtfully consider the inclusivity of multiple aetiologies and diverse manifestations are still needed to develop a comprehensive understanding of addiction and its treatment.

Rationale for the Study

The American Society of Addiction Medicine (2011) considers addiction as a primary chronic disease that highlights dysfunction within neural circuits associated with memory, impulse control, and reinforcement. Likewise, the World Health Organization (WHO, 2019) branches addiction within a framework of complex biological elements of predisposition, emotional vulnerabilities, and environmental vulnerabilities, while noting that some unresolved issues still exist around its conception. Whether a spiritual affliction or caused by genetic predispositions, whether the individual is responsible for it or the substance itself is to be blamed, and of course, the role of psychosocial factors in the addiction cycle that trigger and maintain it has been debated for decades without a conscious resolution. The advancement of neuroscience has stirred controversy concerning the framing of addiction as merely a brain disease, and critics contend that the paradigm minimizes the impact of structural and interpersonal trauma on both the onset of and recovery from addiction (Ausubel, 1958; Goode, 1989; Rosenthal & Faris, 2019). The shift from a moral perspective to biological models has nevertheless led to subsequent changes in treatment for addiction (Khantzian, 2014; Volkow et al., 2016). Once considered a criminal act and penalised for rectifying the behavior, today, evidence-based therapies exist for addiction treatment. Integrated approaches have developed via the efforts of neurobiological research, diagnostic innovations (DSM-5TR & ICD-11), and psychosocial theories, but gaps still exist regarding how effectively these insights are combined with advanced therapeutic strategies (Tomar et al., 2024). Most of the existing treatments mainly focus on behavioral and cognitive aspects of addiction, neglecting emotional and interoceptive distress known to limit recovery and increase the risk of relapse (Paulus & Stewart, 2014; Roy & George, 2014). This review, therefore, highlights the crucial unanswered questions in understanding and treating addiction – the absence of stage-sensitive, relational, and somatically attuned intervention. It underscores the urgent need to synthesize current findings and emerging therapies by leveraging interdisciplinary sources to explore the often-overlooked role of interoceptive discomfort in addiction management. The aim is not only to illuminate the complex nature of addiction but also to advocate for newer, tailored strategies that respond to individuals' situational and relational needs in breaking the addiction cycle.

METHODOLOGY

Study Design

Given the complexity of addiction studies, this research used a narrative review methodology exploring the conceptualization of addiction and identifying critical gaps. This approach is particularly well-suited for synthesizing diverse theoretical frameworks, clinical insights, relational depth, and empirical findings that span neurobiology, psychology, and diagnostic classification systems. Unlike systematic reviews, this study does not prioritize strict inclusion criteria and meta-analytic synthesis.

Literature Search Strategy

The study used major academic databases such as PubMed, Scopus, PsycINFO, and Google Scholar to search for peer-reviewed articles on addiction, published between 2000 and 2024. Keyword combinations included Behavioral Addiction, ICD-11, Gambling or Gaming Disorder, Substance Use Disorder, DSM-5-TR, Brain-Disease Model, Biopsychosocial Model, Addiction Treatment, Cognitive Behavioral Therapy, and Transactional Analysis. Studies focused on addiction's conceptual foundations and clinical implications across different care models were considered.

Inclusion Criteria

Inclusion criteria required sources to be in English, peer-reviewed journals, and directly relevant to either substance-related disorders or behavioral addictions.

Exclusion Criteria

Exclusion criteria eliminated blogs, dissertations, non-peer-reviewed content, and publications using outdated diagnostic models (e.g., pre-DSM-III frameworks).

Data Extraction and Thematic Organization

The selected literature was organized thematically into five domains: Historical and diagnostic evolution, neurobiological foundations, psychological and relational mechanisms, behavioral addictions, and comparative treatment approaches.

Methodological Limitations

While narrative review has its limitations, including the absence of meta-analytic rigor and potential for selection bias, this format best supports the aim of this study, i.e., to offer an interpretive synthesis that bridges gaps across scientific, clinical, and psychosocial understandings of addiction.

CONCEPTUAL AND HISTORICAL UNDERSTANDING OF ADDICTION

Definition and Core Features

The modern conception of addiction emerged during the late 18th century, but the use of substances that cause addiction was recorded in the earliest writings of Chinese, Egyptian, Greek, Babylonian, and Roman civilizations. Our ancestors used fermented, intoxicating beverages like wine, beer, and alcohol for pleasure, as a part of hospitality, to counter fatigue, or even to promote health in some cases. Such beverages were also accepted as a part of religious rituals, so much so that they were offered as an oblation to gods as a gesture of devotion and propitiation. Temperate use of alcohol was allowed in ancient societies (and even today), whereas excessive drinking was associated with poor character and sinful behavior. Similarly, drugs like opium and other such substances were used in medical procedures to relieve pain and promote a calming effect in patients (Rosenthal & Faris, 2019). As long as the person did not lose control, falter, or escape from their life responsibilities, use of alcohol and psychoactive substances was acknowledged without any stigma attached to it.

The concept of addiction evolved with time, when philosophers started documenting the ill effects of alcohol consumption and the destructive results of psychoactive substance use. The work of physicians like Benjamin Rush and Thomas Trotter advanced a new perspective that led to the modern understanding of addiction as a progressive disease. Magnus Huss was the first to refer to alcoholism as a disease in 1849, and the medical

fraternity gradually caught up with this idea. This breakthrough led to the development of the disease model of addiction, which emphasized biological dysfunction over moral failing. Addiction has evolved from a narrow focus on physiological symptoms—particularly tolerance and withdrawal—to a multidimensional construct encompassing psychological, behavioral, and social factors. Early definitions excluded behavioral addictions such as gambling and binge eating, which lacked overt biological markers despite being compulsive and harmful (Goode, 1989; Ausubel, 1958).

Neurobiological research shows that addiction-related behaviors are reinforced by changes in the brain's reward circuitry, particularly dopamine pathways (Koob, 2008; Olds & Milner, 1954). Craving, once viewed primarily as a behavioral symptom, is now increasingly understood as a form of interoceptive distress—an internal discomfort that drives compulsive use. Neurobiological models link this to dopamine dysregulation and emotional allostasis, wherein substances are pursued not for pleasure, but to escape somatic unease (Roy & George, 2014).

This transition from positive to negative reinforcement underscores the role of distress tolerance in relapse vulnerability and the tendency to use substances as a means of physical or emotional escape. Impairments in the prefrontal cortex—responsible for impulse control, decision-making, and emotional regulation—contribute to the compulsivity and poor judgment seen in addiction (Volkow et al., 2016).

These neurobiological findings support the brain disease model, which has helped reduce stigma and promote medical intervention. However, critics argue that this model often overlooks the role of social context, emotional suffering, and learned behavioral patterns (Levy, 2014; Pickard, 2020). Our review affirms the value of neurobiological insights, but emphasizes the need to embed them within a broader psychosocial framework to avoid reductionism and enhance individualized care.

Individuals with addiction often exhibit low distress tolerance and a propensity to avoid internal discomfort, such as restlessness, agitation, and craving (Leyro et al., 2010; Terracciano et al., 2008). This avoidance is somatically driven and compounded by impaired interoceptive awareness (Paulus & Stewart, 2014; Naqvi & Bechara, 2010). Despite its clinical relevance, most treatment paradigms overlook this bodily discomfort, focusing instead on external behaviors and cognition. Addressing interoceptive dysfunction may be key to reducing relapse risk and improving emotional regulation.

Building on this understanding, psychological models offer valuable insight into how emotional dysregulation, cognitive distortions, and defense mechanisms—such as denial and rationalization—sustain addictive patterns (Maedeh et al., 2023). These cycles are often reinforced by maladaptive ego states, including the Rebellious Child or Critical Parent, which reflect unresolved emotional conflicts and impaired self-regulation. This perspective aligns with Khantzian's (2014) psychodynamic view that addiction frequently serves as a coping mechanism for trauma and affective imbalance.

Taken together, these insights underscore the importance of integrating psychological, neurobiological, and relational dimensions into a unified framework—setting the stage for a more nuanced diagnostic and therapeutic understanding of addiction.

DIAGNOSTIC EVOLUTION: DSM AND ICD

Addictions were not initially recognised in DSM but considered as a part of reactions related to personality disorders, leaving their diagnosis largely to the clinician's judgement. They were attributed to moral failing and personality deviances, and secondary to them. A change from moral perspectives to clinical recognition was signalled by the inclusion of drug dependency in the DSM-II (1968). The DSM-III (1980), which formally included physiological markers like tolerance and withdrawal, established the distinction between substance abuse and substance dependence. Although this contributed to the medicalization of addiction, the terminology caused misunderstandings, especially when dependency was mistaken for normal pharmacological tolerance.

Table 1: Evolution of Addiction Classification in DSM: A Comparative Table

DSM Version	Main Area of Edition	Change Introduced
DSM-I (1952)	Moral and sociopathic framing	Classified addiction under 'Sociopathic Personality Disturbance'; no separate diagnostic criteria for addiction
DSM-II (1968)	Terminological expansion	Introduced 'drug dependence'; still did not include alcohol or tobacco under this category
DSM-III (1980)	Medicalization of addiction	Introduced separate categories of 'Substance Abuse' and 'Substance Dependence' based on physiological symptoms like tolerance and withdrawal
DSM-IV (1994)	Categorical refinement	Maintained abuse/dependence dichotomy; criticized for confusion over the term 'dependence'
DSM-5 (2013)	Dimensional model introduction	Merged abuse/dependence into single diagnosis 'Substance Use Disorder' (SUD); introduced craving as a criterion; recognized Gambling Disorder
DSM-5-TR (2022)	Clarification and cautious expansion	Reaffirmed SUD model; clarified that tolerance/withdrawal alone aren't diagnostic without behavioral impairment; listed Internet Gaming Disorder for further study

Current Definitions: DSM-5-TR and ICD-11

The DSM-5 (2013) officially categorized gambling disorder as a behavioral addiction, added craving as a criterion, and merged abuse and dependence into the diagnosis of substance use disorder (SUD) (APA, 2022). These changes reflect a more nuanced understanding of addiction, emphasizing subjective experience and functional impairment. In contrast, the ICD-11 (WHO, 2019) adopts a public health approach, classifying gaming and gambling disorders under "addictive behaviors" and emphasizing global applicability. Critics argue that ICD's broader scope risks over-pathologizing high-engagement behaviors, while DSM's strict symptom-count criteria may delay diagnosis (Saunders et al., 2020). However, neither system adequately addresses the physical discomfort and urge-driven distress that often precipitate relapse. This diagnostic blind spot highlights the need for therapeutic models that target interoceptive distress—an internal discomfort that drives compulsive use but remains under-assessed. Approaches like Interoceptive Exposure (IE) may help bridge this gap by directly addressing somatic dysregulation linked to craving and withdrawal (Paulus & Stein, 2006; Stewart et al., 2021).

Table 2: DSM-5-TR vs ICD-11 – Classification of Addictive Disorders

Feature	DSM-5-TR	ICD-11
Behavioral Addictions	Only Gambling Disorder is recognized	Gambling & Gaming Disorders recognized
Internet Gaming Disorder	"Condition for further study"	Officially classified as an addiction
Diagnostic Basis	Symptom count + severity	Functional impairment + clinical judgment
Focus	U.S.-centric clinical usage	Global public health, cross-cultural scope
Substance Use Disorder (SUD)	Continuum model (mild/moderate/severe)	Similar continuum model
Inclusion of Harm to Others	Not emphasized	Included (impact on others considered)

BEHAVIORAL VS. SUBSTANCE ADDICTIONS

The shared neurobiological and psychological mechanisms across behavioral and substance addictions—including compulsivity, interoceptive distress, and emotional dysregulation—have been discussed earlier. These insights lay the foundation for understanding how therapeutic interventions must address not only external behaviors but also the internal discomfort that perpetuates addictive cycles.

The Addiction Cycle

Moreover, Koob and Le Moal (2005) propose a three-stage cycle of addiction:

1. Binge/Intoxication: Activation of reward networks.
2. Withdrawal/Negative Affect: During cessation, stress systems are recruited.
3. Preoccupation/anticipation: This increases the likelihood of relapse and activates desire circuits.

Regardless of whether the substance (such as alcohol or opioids) or activity (such as gambling or gaming) is involved, these alterations add to the compulsivity and loss of control that define clinical addiction.

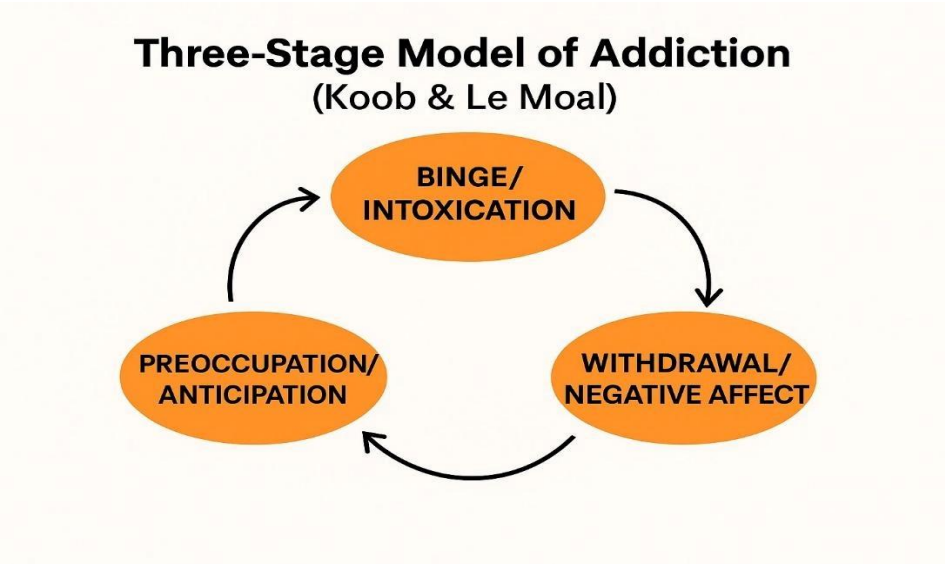

Figure 1: Three-Stage Model of Addiction (Koob & Le Moal)

Both our conceptualization of addiction and our approach to intervention are influenced by these changing definitions. We look at therapeutic responses in the following part, which include behavioral and cognitive strategies as well as relationally and emotionally targeted therapies.

THERAPEUTIC INTERVENTIONS

Contemporary addiction treatment has evolved from punitive, behaviorist models to integrative, client-centered approaches that recognize addiction as a chronic, relapsing condition shaped by emotional, cognitive, and relational factors (Miller et al., 2014; Khantzian, 2014). Stage-sensitive protocols are increasingly emphasized. In early engagement, Motivational Interviewing (MI) and Motivational Enhancement Therapy (MET) foster readiness for change through empathic dialogue and autonomy support (Prochaska & DiClemente, 1983; Miller et al., 2014). These approaches are particularly effective when paired with structured modalities like Cognitive Behavioral Therapy (CBT)**,** which targets maladaptive thoughts, relapse triggers, and coping skill development (Hofmann et al., 2012).

However, CBT's cognitive focus may fall short in cases involving deep emotional conflict or trauma. Here**,** Transactional Analysis (TA) offers a complementary lens by exploring ego states and relational scripts—such as the Critical Parent or Victim—that perpetuate shame and relapse (Berne, 1961; Masiak, 2013). Mindfulness-Based Relapse Prevention (MBRP) adds another layer by cultivating present-moment awareness and reducing automatic reactivity to cravings (Eric et al., 2018).

Community-based models like SMART Recovery emphasize self-management and peer support. Though less structured, they provide essential scaffolding in resource-limited settings or as supplements to formal care (Gowing et al., 2015). Dialectical Behavior Therapy for Substance Use Disorders (DBT-SUD) integrates emotion regulation, mindfulness, and interpersonal effectiveness with addiction-specific strategies (Linehan, 1993; Linehan et al., 2002). While DBT-SUD validates emotional pain and promotes adaptive coping, it does not directly target the somatic discomfort that often drives compulsive use.

To address this gap, we highlight Interoceptive Exposure (IE)—a promising intervention adapted from anxiety treatment (Barlow et al., 2000; Paulus & Stein, 2006). IE systematically exposes clients to uncomfortable internal sensations (e.g., agitation, racing heart) to build tolerance and reduce avoidance. Unlike traditional therapies that focus on cognition or behavior, IE directly engages the bodily experience of craving and withdrawal, offering a novel pathway for relapse prevention (Stewart, Wright, & Paulus, 2021).

Table 3: Treatment Approaches in Addiction: Comparative Analysis

Treatment Name	Mechanisms of Action	Critical Analysis	Area for Improvement / Suggestion
Cognitive Behavioral Therapy (CBT)	Targets maladaptive thoughts and behaviors; emphasizes relapse prevention, cognitive restructuring, and skill-building.	Effective in early-stage treatment; highly structured. May not address deep relational or emotional issues.	Combine with emotionally focused therapies (e.g., TA) to address trauma and relational patterns.

Transactional Analysis (TA)	Focuses on ego states, life scripts, and interpersonal roles; enhances self-awareness and shifts maladaptive relational patterns.	Insightful for deep-seated relational issues and unconscious scripts. Less empirical validation compared to CBT.	Needs greater empirical support and integration with behavioral interventions for structure.
Motivational Interviewing (MI) / Motivational Enhancement Therapy (MET)	Enhances motivation for change through empathetic, client-centered dialogue; reduces ambivalence.	Effective in increasing treatment engagement. May lack depth for long-term behavior change if used alone.	Use as preparatory phase before CBT or TA to enhance readiness.
Mindfulness-Based Relapse Prevention (MBRP)	Increases awareness of triggers, enhances stress regulation, and reduces reactivity to cravings.	Supports long-term maintenance; suitable for relapse prevention. May be less effective without initial behavioral work.	Combine with Motivational Interviewing (MI) or Motivational Enhancement Therapy (MET) to build readiness, followed by CBT or TA for stabilization and deeper therapeutic change.
SMART Recovery Models	Emphasizes autonomy, self-management, and community support.	Flexible and empowering. Less structured than clinical therapy; may not suit all severity levels.	Integrate with professional therapy for comprehensive care in severe cases.
Interoceptive Exposure (IE)	Reduces sensitivity to internal body sensations and raises distress tolerance by exposing individuals to uncomfortable internal states (such as pain or a racing heart) gradually.	Showing promise in diminishing relapses caused by internal emotional triggers and increasing tolerance to discomfort. Primarily utilized for anxiety disorders, there is growing evidence of its use in addiction.	It can be incorporated into the middle to late phases of treatment for patients with high distress avoidance, but it needs adaptation and more empirical validation in addiction contexts.

RESEARCH GAPS AND FUTURE DIRECTIONS

Building on prior critiques of existing models, this section explores a promising yet underutilized intervention—**Interoceptive Exposure (IE)**—that directly targets the somatic discomfort often overlooked in conventional care.

While therapies like **Mindfulness-Based Relapse Prevention (MBRP)** and **Dialectical Behavior Therapy (DBT)** acknowledge interoceptive distress and offer coping strategies, they do not systematically train clients to tolerate the internal sensations that often precipitate relapse (Eric et al., 2018; Linehan et al., 2002).

Interoceptive Exposure (IE), originally developed for anxiety and panic disorders, offers a more direct and structured approach. By gradually exposing clients to uncomfortable internal sensations—such as agitation, breathlessness, or a racing heart—IE builds distress

tolerance and reduces the urge to escape through substance use (Barlow et al., 2000; Stewart, Wright, & Paulus, 2021).

This positions IE not as a replacement but as a valuable adjunct to existing models. It may be especially beneficial for clients with low distress tolerance, limited insight, and high relapse risk.

Future research should explore IE's efficacy in addiction contexts, particularly when integrated into stage-sensitive, personalized treatment paradigms. Such inquiry could advance the field by bridging the gap between neurobiological insight and somatic experience—an area often under-addressed in conventional care.

Table 3: Multidimensional Rationale for Interoceptive Distress and Interoceptive Exposure (IE) in Addiction Treatment

Dimension	Key Insight / Development	Connection to Interoceptive Distress & IE
1. Historical Definitions	Early addiction models focused on physical symptoms like withdrawal and tolerance, ignoring internal states or behavioral compulsions.	Created a gap in recognizing subjective internal discomfort. Modern expansion allows us to revisit internal symptoms like craving.
2. Diagnostic Systems (DSM-5 & ICD-11)	Craving added as a criterion; behavioral addictions included in ICD-11. But systems still diverge in structure and priorities.	Craving is a proxy for interoceptive distress. Divergence shows lack of focus on internal experience, supporting the need for targeted tools.
3. Neurobiological Models	Addiction disrupts dopamine circuitry, brain plasticity, and stress-response systems—affecting awareness and regulation of internal sensations.	Brain changes impair interoceptive awareness. IE may restore bodily signal tolerance disrupted by addiction neuroadaptations.
4. Psychological Models	Addicted individuals often show low distress tolerance, emotional dysregulation, and defense mechanisms like denial and escape-based coping.	These behaviors align with interoceptive avoidance. IE offers a direct tool to train distress tolerance.
5. Therapeutic Approaches	CBT, TA, DBT, and MBRP help with cognition, relationships, and mindfulness, but few therapies directly target bodily discomfort during craving or withdrawal.	IE provides a systematic, somatic-based method that complements these therapies by training clients to face internal discomfort.
6. Research Gap & Future Directions	Standard treatments are not designed to address somatic tension and discomfort that precipitate relapse.	Proposing IE addresses this critical treatment gap and supports stage-sensitive, relapse-prevention focused care.

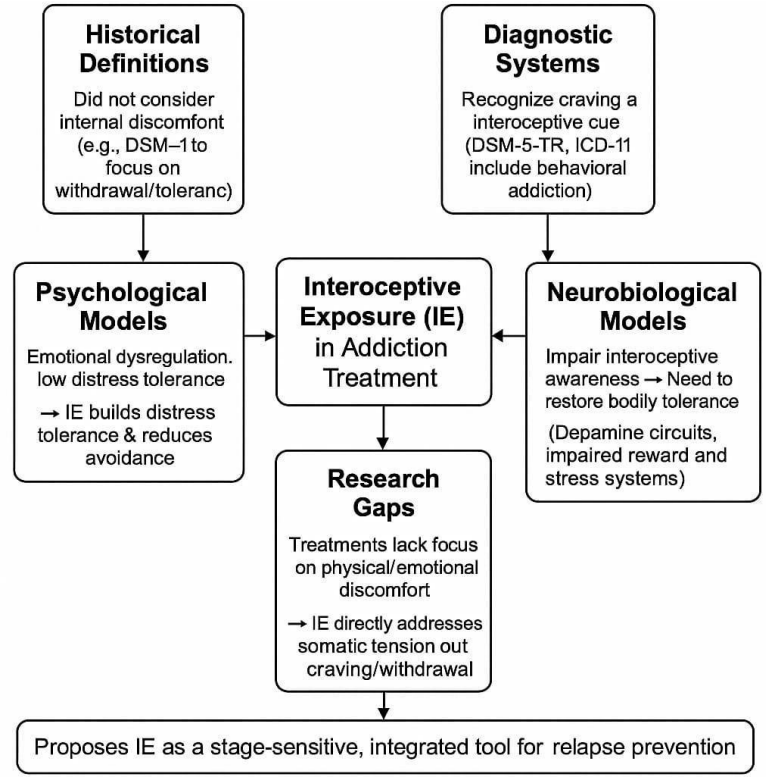

Figure 2: Conceptual Map: Pathway leading to the adoption of Interoceptive Exposure in addiction therapy

DISCUSSION AND CONCLUSION

Addiction remains one of the most complex and persistent challenges in public and mental health. Despite significant advances in neuroscience, psychological theory, and clinical practice, no single model fully captures its multifaceted nature. Neurobiological paradigms have illuminated mechanisms of compulsivity, reward dysregulation, and relapse vulnerability (Volkow et al., 2016), yet without integration into broader psychosocial frameworks, they risk reductionism (Pickard, 2020; Levy, 2014).

Our review underscores the need for a multidisciplinary, person-centered approach. Diagnostic systems like DSM-5-TR and ICD-11 offer valuable classification tools, but their divergent criteria for behavioral addictions (e.g., gambling vs. gaming) have real-world implications for clinical recognition, insurance coverage, and cultural applicability (Saunders et al., 2020).

Therapeutic models such as **Motivational Interviewing (MI)** and **Cognitive Behavioral Therapy (CBT)** provide structured, evidence-based strategies for behavior change (Hofmann et al., 2012; Miller et al., 2014). However, their cognitive focus may overlook deeper emotional wounds and relational dysfunction. Approaches like **Transactional Analysis (TA)** address these gaps by exploring ego states and life scripts that perpetuate addictive cycles (Berne, 1961; Masiak, 2013). When combined with community-based supports (e.g., SMART Recovery) and mindfulness-based relapse prevention (Eric et al., 2018), these therapies offer a more holistic recovery pathway.

A key insight from this review is the persistent undervaluation of **interoceptive distress**—the internal discomfort that often drives compulsive use. Neuroplastic changes in addiction

disrupt interoceptive processing, leading to emotional dysregulation and maladaptive coping (Khantzian, 2014; Goldstein & Volkow, 2011). Yet, most treatment paradigms focus on external behaviors, neglecting the somatic agitation experienced during craving and withdrawal—periods of heightened relapse risk (Roy & George, 2014; Paulus & Stewart, 2014).

This gap calls for targeted interventions. **Interoceptive Exposure (IE)**, adapted from anxiety treatment, offers a novel approach by systematically helping clients confront and tolerate uncomfortable bodily sensations (Paulus & Stein, 2006; Stewart, Wright, & Paulus, 2021). Unlike conventional cognitive or behavioral therapies, IE addresses the physical experience of craving, potentially reducing the urge to escape through substance use.

Future research should investigate IE's clinical utility in addiction contexts, especially when integrated into stage-sensitive, personalized care. Such inquiry could pave the way for more emotionally nuanced and physiologically attuned interventions—advancing both theory and practice in addiction treatment.

REFERENCES

Alfonso, J. P. (2021). Neurobiological and psychological mechanisms of addiction. *Journal of Addictive Diseases, 39*(4), 275–292. https://doi.org/10.1080/10550887.2021.1895093

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.).

American Society of Addiction Medicine. (2011). *Public policy statement: Definition of addiction*. https://www.asam.org

Ausubel, D. P. (1958). *Theory and problems of child development*. Grune & Stratton.

Barlow, D. H., Allen, L. B., & Choate, M. L. (2000). Toward a unified treatment for emotional disorders. *Behavior Therapy, 31*(2), 205–220.

Berne, E. (1961). *Transactional analysis in psychotherapy*. Grove Press.

Billieux, J., Schimmenti, A., Khazaal, Y., Maurage, P., & Heeren, A. (2015). Are we overpathologizing everyday life? *Journal of Behavioral Addictions, 4*(3), 119–123.

Ceceli, A. O., et al. (2022). Neurobiology of compulsivity in behavioral addictions. *Neuroscience and Biobehavioral Reviews, 132*, 845–859. https://doi.org/10.1016/j.neubiorev.2021.11.004

Eric, L. G., Witkiewitz, K., Bowen, S., Chawla, N., & Marlatt, G. A. (2018). Mindfulness-based relapse prevention for substance use disorders: A systematic review. *Substance Abuse, 39*(2), 92–104. https://doi.org/10.1080/08897077.2017.1386420

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many leading causes of death in adults. *American Journal of Preventive Medicine, 14*(4), 245–258.

Fluyau, D., Hashmi, M. F., & Charlton, T. E. (2024). Drug Addiction. In *StatPearls*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK549783/

Goldstein, R. Z., & Volkow, N. D. (2011). Dysfunction of the prefrontal cortex in addiction: Neuroimaging findings and clinical implications. *Nature Reviews Neuroscience, 12*(11), 652–669.

Goode, E. (1989). *Drugs in American society*. McGraw-Hill.

Gowing, L. R., Ali, R., Allsop, S., Marsden, J., Turf, E., West, R., & Witton, J. (2015). Global statistics on addictive behaviours: 2014 status report. *Addiction, 110*(6), 904–919. https://doi.org/10.1111/add.12899

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of CBT: A review of meta-analyses. *Cognitive Therapy and Research, 36*(5), 427–440.

Khantzian, E. J. (2014). Treating addictive disorders: A psychodynamic perspective. *American Journal on Addictions, 23*(4), 336–339. https://doi.org/10.1111/j.1521-0391.2014.12112.x

Koob, G. F. (2008). A role for brain stress systems in addiction. *Neuron, 59*(1), 11–34.

Koob, G. F., & Le Moal, M. (2005). Plasticity of reward neurocircuitry and the 'dark side' of drug addiction. *Nature Neuroscience, 8*(11), 1442–1444.

Levy, N. (2014). Addiction is not a brain disease. *Neuroethics, 6*(1), 77–90.

Leyro, T. M., Zvolensky, M. J., & Bernstein, A. (2010). Distress tolerance and psychopathological symptoms and disorders: A review of the empirical literature. *Clinical Psychology Review, 30*(7), 867–882.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.

Linehan, M. M., Schmidt, H., Dimeff, L. A., Craft, J. C., Kanter, J., & Comtois, K. A. (2002). Dialectical behavior therapy for patients with borderline personality disorder and drug dependence. *American Journal on Addictions, 10*(4), 279–292.

Maedeh, K., Nikmanesh, Z., & Roushani, K. (2023). Defense mechanisms and ego state functions in individuals with substance use disorder: A comparative study. *International Journal of Mental Health and Addiction, 21*(1), 211–225. https://doi.org/10.1007/s11469-022-00756-y

Masiak, M. (2013). Applications of the drama triangle in addiction psychotherapy. *Polish Journal of Psychiatry, 47*(2), 175–180.

Miller, W. R., Walters, S. T., & Bennett, M. E. (2014). How effective is alcoholism treatment in the United States? *Journal of Studies on Alcohol and Drugs, 75*(6), 811–822.

Naqvi, N. H., & Bechara, A. (2010). The insula and drug addiction: An interoceptive view of pleasure, urges, and decision-making. *Brain Structure and Function, 214*(5–6), 435–450.

Olds, J., & Milner, P. (1954). Positive reinforcement produced by electrical stimulation of septal area and other regions of rat brain. *Journal of Comparative and Physiological Psychology, 47*(6), 419–427.

Paulus, M. P., & Stein, M. B. (2006). An insular view of anxiety. *Biological Psychiatry, 60*(4), 383–387.

Paulus, M. P., & Stewart, J. L. (2014). Interoception and drug addiction. *Neuropharmacology, 76*(B), 342–350.

Pickard, H. (2020). The purpose in chronic addiction. *Neuroethics, 13*(2), 185–198.

Prochaska, J. O., & DiClemente, C. C. (1983). *Stages and processes of self-change of smoking: Toward an integrative model of change*. Journal of Consulting and Clinical Psychology, 51(3), 390–395. https://doi.org/10.1037/0022-006X.51.3.390

Roy, A., & George, S. (2014). Craving and withdrawal: A translational framework for the development of new treatments for addiction. *Dialogues in Clinical Neuroscience, 16*(3), 327–336.

Saunders, J. B., et al. (2020). ICD-11: A blueprint for the future of addiction diagnosis. *Addiction, 115*(5), 752–760.

Skewes, M. C., & Gonzalez, V. M. (2013). The biopsychosocial model of addiction. In H. L. White & M. J. Rabin (Eds.), *Addictions and self-control* (pp. 61–84). Oxford University Press.

Stewart, J. L., Wright, R. A., & Paulus, M. P. (2021). Interoception and addiction: A neurocognitive model of craving. *Current Opinion in Behavioral Sciences, 38*, 31–38.

Terracciano, A., Löckenhoff, C. E., Crum, R. M., Bienvenu, O. J., & Costa, P. T. Jr. (2008). Five-Factor Model personality profiles of drug users. *BMC Psychiatry, 8*, 22. https://doi.org/10.1186/1471-244X-8-22

Volkow, N. D., Koob, G. F., & McLellan, A. T. (2016). Neurobiologic advances from the brain disease model of addiction. *New England Journal of Medicine, 374*(4), 363–371.

World Health Organization. (2019). *ICD-11: International classification of diseases 11th revision*. Geneva: WHO.

World Health Organization. (2024). *Global status report on alcohol and health and treatment of substance use disorders*. WHO. https://www.who.int/publications/i/item/9789240096745

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Conflict of Interest

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