Research Article

A Comparative Analysis of emotional regulation, Impulsivity, and Coping Skills Between Alcohol Use Disorder and Multiple Substance Use Disorders

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I N F O

A B S T R A C T

This study presents a comparative analysis of emotional regulation, impulsivity, and coping skills between individuals diagnosed with Alcohol Use Disorder (AUD) and those with Multiple Substance Use Disorders (MSUD). Recognising the critical role these psychological factors play in substance use behaviours, the research aimed to identify distinct and shared patterns across these two groups to inform tailored clinical interventions.

Using a cross-sectional design, data were collected from 60 participants (30 AUD and 30 MSUD) recruited from clinical settings. Standardised instruments—the Difficulties in Emotion Regulation Scale (DERS), Barratt Impulsiveness Scale (BIS-11), and Brief COPE Inventory—were administered to assess emotional regulation deficits, impulsivity traits, and coping strategies, respectively.

Results indicated that individuals with MSUD exhibited significantly greater difficulties in emotional regulation and higher impulsivity levels compared to the AUD group. The MSUD group also predominantly employed emotion-focused and avoidant coping strategies, whereas the AUD group favoured more problem-focused coping mechanisms.

These findings highlight important psychological distinctions between the two groups, suggesting the need for specialised treatment approaches. Enhancing emotional regulation and promoting adaptive coping strategies may be particularly beneficial for MSUD populations, who tend to display more severe psychological challenges.

Overall, this study contributes valuable insights to addiction psychology by delineating the nuanced emotional and behavioural profiles of AUD and MSUD individuals, thereby supporting more effective, individualised treatment planning.

Keywords: Alcohol Use Disorder, Multiple Substance Use Disorder, Emotion Regulation, Impulsivity, Coping Strategies

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Introduction

Substance use disorders (SUDs) represent a pervasive global public health challenge, contributing substantially to morbidity, mortality, and socioeconomic burden (World Health Organisation [WHO], 2021). Among the spectrum of SUDs, Alcohol Use Disorder (AUD) is one of the most prevalent, while Multiple Substance Use Disorders (MSUDs)—involving the concurrent or sequential misuse of more than one substance—pose unique and often more severe clinical and psychosocial complications. Despite overlapping symptomatology, important psychological distinctions between AUD and MSUDs remain under-explored, particularly in the domains of emotional regulation, impulsivity, and coping mechanisms.

Emotional regulation refers to the capacity to monitor, evaluate, and modify emotional reactions to achieve goals or adapt to environmental demands.[1] Impaired emotional regulation is commonly observed in individuals with SUDs and has been implicated in both the initiation and maintenance of addictive behaviours.[2] Individuals with MSUDs may exhibit greater emotional dysregulation than those with a singular diagnosis, potentially due to the complex neurobiological and psychosocial interactions involved in polysubstance use.[3]

Impulsivity, a tendency toward rapid, unplanned actions without regard for potential negative consequences, is another central psychological feature implicated in SUDs. Research indicates that impulsivity not only increases vulnerability to substance initiation but also predicts treatment non-adherence and relapse.[4] Notably, MSUD populations often report higher levels of trait impulsivity compared to individuals with AUD alone, suggesting distinct underlying cognitive and behavioural profiles.[5]

Coping strategies—defined as the cognitive and behavioural efforts employed to manage stress—play a pivotal role in both the onset and recovery from SUD.[6] Maladaptive coping styles, such as avoidance or emotion-focused coping, are disproportionately represented in substance-using populations and may differ significantly between those with AUD and those with MSUDs.[7] Understanding the differential patterns of coping in these populations can inform more targeted and effective intervention strategies.

While previous studies have examined each of these psychological constructs independently across various substance use groups, few have systematically compared individuals with AUD to those with MSUDs across all three domains. Understanding how emotional regulation, impulsivity, and coping strategies differ between these two diagnostic categories may elucidate distinct etiological pathways and inform more nuanced prevention and treatment approaches.

Literature Review

Emotional Regulation in Substance Use Disorders

Emotional regulation—the ability to influence one's emotional experience and expression—is crucial for psychological well-being.[1] Dysregulation in emotional processing is both a precursor and a consequence of substance misuse.[2] In the context of Alcohol Use Disorder (AUD), individuals often report using alcohol to self-medicate or alleviate negative emotional states such as anxiety, depression, or anger.[8] This reliance on substance use as an emotion regulation strategy leads to a maladaptive feedback loop, reinforcing both the emotional dysregulation and the addictive behaviour.

In individuals with Multiple Substance Use Disorders (MSUDs), emotional regulation impairments are typically more severe.[3] The co-use of substances (e.g., alcohol with stimulants, opioids, or benzodiazepines) complicates the emotional landscape, often resulting in heightened affective instability, emotional numbing, and alexithymia.[9] Studies utilising the Difficulties in Emotion Regulation Scale (DERS) have consistently shown higher scores among individuals with MSUDs compared to single-substance users, indicating more pervasive emotion dysregulation.[10]

Neurobiologically, both AUD and MSUD populations show diminished activity in brain regions associated with emotional regulation—particularly the prefrontal cortex and anterior cingulate cortex.[11] However, MSUDs are associated with more pronounced structural and functional deficits, possibly due to the synergistic neurotoxic effects of multiple substances[12]

Impulsivity and Its Role in Addiction

Impulsivity is a multidimensional construct involving the tendency to act prematurely, without foresight, and often without consideration of consequences.[13] It is a critical vulnerability factor in the aetiology of SUDs and a significant predictor of treatment outcomes.[4] In individuals with AUD, increased impulsivity—particularly in the domains of decision-making and response inhibition—is well documented.[14]

Among individuals with MSUDs, impulsivity is often elevated to a greater degree. A study by[5] found that individuals using multiple substances scored significantly higher on the Barratt Impulsiveness Scale (BIS-11) compared to those with AUD alone. This heightened impulsivity in MSUD populations may reflect a broader underlying externalising psychopathology or the cumulative neurobehavioural effects of polysubstance exposure.[15]

Behavioural paradigms such as the Go/No-Go and Delay Discounting Tasks consistently demonstrate poorer impulse control and steeper discounting rates in MSUDs, suggesting impairments in both motor inhibition and valuation pro-

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cesses.[16] These deficits may contribute to a more chaotic and unpredictable course of substance use, complicating both diagnosis and treatment.

Coping Strategies and Substance Use

Coping strategies are the behavioral and cognitive efforts used to manage internal and external stressors.[6] In the addiction literature, coping has been bifurcated into adaptive (e.g., problem-solving, seeking support) and maladaptive (e.g., avoidance, denial, substance use) styles.[17] Individuals with AUD often exhibit a reliance on maladaptive coping strategies, particularly emotion-focused and avoidant coping, which are associated with increased craving and relapse risk.[18]

In MSUD populations, coping strategies tend to be more fragmented and ineffective. These individuals frequently report using substances as a primary method of coping with emotional distress, trauma, or interpersonal conflict.[7] The complexity of MSUDs often correlates with histories of early-life adversity, which may impair the development of effective coping mechanisms.[19]

Importantly, coping style has also been linked to treatment engagement and outcomes. Those with MSUDs are more likely to drop out of treatment or relapse earlier than those with AUD, in part due to poorer coping repertoires.[20] Research suggests that treatment approaches targeting coping skills training can lead to significant improvements in both emotional regulation and substance use outcomes.[21]

Comparative Studies Between AUD and MSUDs

Few studies have conducted direct comparisons of emotional regulation, impulsivity, and coping between AUD and MSUDs, but the available evidence suggests important differences. For instance,[22] found that MSUD individuals demonstrated higher impulsivity and poorer emotional regulation than those with AUD alone. Similarly, studies on coping[7] reveal that MSUD individuals employ more maladaptive coping strategies and are less likely to engage in cognitive reappraisal or problem-solving.

Clinical observations further indicate that individuals with MSUDs tend to exhibit more severe psychopathology, including higher rates of comorbid anxiety, depression, and personality disorders, which may exacerbate difficulties in the domains under study.[23] The heterogeneity within MSUD populations also presents unique challenges, suggesting the need for personalised, integrative treatment models that address multiple psychological deficits concurrently.

Research Gap Analysis

There is a pressing need for integrative, comparative research examining emotional regulation, impulsivity, and coping strategies in individuals with AUD and MSUDs. The current literature suffers from fragmentation, under-representation of MSUDs, inconsistent methodologies, and a lack of clinical translation. This study addresses these deficiencies by employing a comprehensive, multivariable comparative approach using validated psychometric instruments and clearly defined diagnostic groups. By filling these critical research gaps, the present study aims to inform both theory and practice in the treatment of substance use disorders.

Research Objectives and Hypotheses

This study aims to investigate the psychological differences in emotional regulation, impulsivity, and coping skills between individuals diagnosed with Alcohol Use Disorder (AUD) and those diagnosed with Multiple Substance Use Disorders (MSUDs). This chapter outlines the key research objectives and corresponding hypotheses that guide the empirical component of the study.

Research Objectives

Objective

To compare emotional regulation capabilities between individuals with AUD and those with MSUDs.

- **Rationale:** Emotional regulation deficits have been widely documented in substance-using populations (Aldao et al., 2010; Gross, 2015) [3, 4], yet few studies have examined how these deficits vary across different diagnostic categories. Understanding these differences may provide insight into the emotional triggers underlying substance use patterns.

Objective

To assess levels of impulsivity in individuals with AUD versus those with MSUDs.

- **Rationale:** Impulsivity is a key trait associated with the onset and maintenance of substance use, particularly among polysubstance users (Moeller et al., 2001; Verdejo-García et al., 2008).6. Identifying distinctions in impulsivity profiles can inform more nuanced risk assessments and interventions.

Objective

To evaluate coping strategies employed by individuals with AUD and those with MSUDs.

- **Rationale:** Coping styles significantly influence relapse risk and treatment outcomes (Carver et al., 1989; Hasking et al., 2011). 9A comparative analysis will elucidate how individuals with varying substance use profiles adapt—or fail to adapt—to stress and emotional challenges. Objective 4:

To explore the interrelationship between emotional regulation, impulsivity, and coping skills within and between the two diagnostic groups.

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- **Rationale:** These psychological constructs are not isolated traits but are interlinked in complex ways that may differ across diagnostic boundaries. Mapping these interrelationships might contribute to a more integrated model of substance use behaviour (Verdejo-García et al., 2007; Sinha, 2008). 6

Research Hypotheses

Based on the literature and theoretical frameworks discussed previously, the following hypotheses are proposed:

Hypothesis 1 (H1)

Individuals with MSUDs exhibit significantly greater difficulties in emotional regulation compared to individuals with AUD.

- **Justification:** Studies suggest higher emotional dysregulation in polysubstance users due to the compounded psychological burden and more severe addiction profiles (Feingold et al., 2021; Weiss et al., 2015). 5.12

Hypothesis 2 (H2)

Individuals with MSUDs score higher on measures of impulsivity than individuals with AUD.

- **Justification:** Polysubstance use is associated with elevated levels of both trait and state impulsivity, potentially due to broader deficits in executive control (Verdejo-García et al., 2008; Perry & Carroll, 2008). 6.18

Hypothesis 3 (H3)

Individuals with MSUDs employ significantly less adaptive coping strategies (e.g., more avoidance or emotion-focused coping) than those with AUD.

- Justification: Maladaptive coping is often a predictor and consequence of multi-substance use, reflecting chronic avoidance of distressing emotional states (Hasking et al., 2011; Khantzian, 1997)11,21.

Hypothesis 4 (H4)

There have been significant positive correlations between emotional dysregulation and impulsivity and significant negative correlations between adaptive coping and both emotional dysregulation and impulsivity in both diagnostic groups.

- **Justification:** Prior research has shown that poor emotional regulation is associated with heightened impulsivity and the use of maladaptive coping strategies across SUD populations (Aldao et al., 2010; Tull et al., 2011). 4.12

Hypothesis 5 (H5)

The strength of the interrelationships among emotional regulation, impulsivity, and coping differs between the AUD and MSUD groups.

- **Justification:** Differences in clinical complexity and neuropsychological impairment between AUD and MSUD populations are likely to influence the strength and directionality of these relationships.

Research Design

This study adopts a quantitative, cross-sectional, comparative design grounded in the positivist paradigm. The positivist stance allows for objective measurement and statistical comparison of psychological traits between individuals with Alcohol Use Disorder (AUD) and those with Multiple Substance Use Disorders (MSUDs).

- Quantitative methods are appropriate for hypothesis testing and for evaluating correlations between emotional regulation, impulsivity, and coping skills.
- A comparative design enables the investigation of statistically significant differences between two well-defined clinical populations.

Participants and Sampling

Population

The target population includes adults (aged 18 and above) who have been clinically diagnosed with either AUD or MSUD as per DSM-5 criteria (American Psychiatric Association, 2013) and are currently enrolled in substance use treatment programmes at psychiatric or rehabilitation centres.

Sampling Method

A purposive sampling technique has been employed, selecting participants who met strict inclusion criteria:

- Diagnosed with either AUD or MSUD by a qualified clinician.
- Currently receiving treatment at recognised institutions.
- Medically and psychologically stable to provide informed consent and complete questionnaires.

Sample Size

Based on power analysis (Cohen, 1988), a minimum of 30 participants per group (AUD and MSUD) have been studied.

Instruments

Difficulties in Emotion Regulation Scale (DERS)

- Developed by Gratz and Roemer (2004).
- Comprises 36 items assessing six domains of emotional dysregulation.
- 5-point Likert scale (1 = almost never, 5 = almost always).
- Validated in clinical populations with high reliability (Cronbach's $\alpha > .85$).

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Barratt Impulsiveness Scale (BIS-11)

- Developed by Patton et al. (1995).
- 30 items measuring three facets of impulsivity: attentional, motor, and non-planning.
- Responses on a 4-point Likert scale.
- Widely used in substance use research; Cronbach's α ranges from .79 to .83.

Brief COPE Inventory

- Developed by Carver (1997).
- Measures 14 coping strategies (e.g., active coping, avoidance, denial).
- 28 items rated on a 4-point Likert scale (1 = I haven't been doing this at all, 4 = I've been doing this a lot).
- Shown to be valid in both clinical and non-clinical populations.

Procedure

- Written informed consent was secured from all participants.
- Screening for inclusion/exclusion criteria done via brief clinical interview.
- Participants completed the DERS, BIS-11, and Brief COPE in a quiet setting.
- Anonymity and confidentiality have been maintained throughout data handling.

Data Analysis Plan

All data have been analysed using SPSS (Version 28). The following techniques have been applied:

- **Descriptive Statistics:** Means, standard deviations, and frequency distributions.
- **Independent Samples t-tests:** To compare AUD and MSUD groups on each variable.
- **Pearson Correlation:** To assess relationships among emotional regulation, impulsivity, and coping skills.
- **Multiple Regression Analysis:** To examine predictive relationships.
- **MANOVA:** To assess multivariate differences between the two groups across all dependent variables.

Assumptions of normality, homogeneity of variance, and multicollinearity have been tested and addressed accordingly (Field, 2018).

Ethical Considerations

- Participants have been informed of their right to withdraw at any stage without penalty.
- All data have been and will be kept confidential and securely stored.
- No identifiable information has been collected.
- Psychological support has been made available in case participation induced distress.

The study adhered to the Declaration of Helsinki (World Medical Association, 2013) and institutional ethical standards.

Limitations of Methodology

- Use of self-report measures may be subject to social desirability bias.
- Cross-sectional design limits causal inference.
- Purposive sampling may reduce generalisability to the broader population.

Content Validity

Content validity refers to the extent to which an instrument adequately covers the construct it is intended to measure. For this study:

- **Expert Review:** A panel comprising three clinical psychologists, including the research supervisor, Dr Nandan Kumar Thakur, and two other subject matter experts, reviewed the items of all three instruments.
- **Evaluation Criteria:** Experts assessed each item for clarity, relevance, and representativeness of the constructs of emotional regulation, impulsivity, and coping skills.
- **Outcome:** Minor modifications were suggested, particularly for certain Brief COPE items to better fit the cultural context of the sample. For instance, some wording was adapted for better comprehension without altering the conceptual meaning.
- **Content Validity Index (CVI):** Using a 4-point scale (1 = not relevant, 4 = highly relevant), items achieving a CVI of 0.80 or higher were retained. The overall CVI for each instrument exceeded 0.85, indicating strong content validity.

Construct Validity

Construct validity evaluates whether the instrument measures the theoretical construct it purports to assess. It was examined through:

- **Exploratory Factor Analysis (EFA):** Conducted on the pilot data (N=20), using principal component analysis with varimax rotation for each instrument.
- **DERS:** The factor structure corresponded closely with the original six subscales (nonacceptance, goals, impulse, awareness, strategies, clarity). Factor loadings were above 0.50 for most items, supporting the scale's multidimensionality.
- **BIS-11:** The EFA replicated the three-factor structure (attentional, motor, and non-planning impulsivity), with factor loadings ranging from 0.52 to 0.78, confirming construct alignment.
- **Brief COPE:** Factor analysis revealed three major coping styles consistent with the literature—problem-focused, emotion-focused, and avoidant coping—with adequate item loadings (>0.45).

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• **Convergent Validity:** Moderate to strong correlations were observed between related constructs; for example, higher impulsivity (BIS-11 scores) correlated positively with emotional dysregulation (DERS scores) (r = .56, p < .05), consistent with theoretical expectations.

Reliability Analysis

Reliability indicates the consistency and stability of an instrument over time or across items. The following tests were applied:

• **Internal Consistency:** Cronbach's alpha coefficients were computed for each scale and their subscales.

Instrument

Overall α

Subscale α Range

DERS

0.87

0.78 – 0.85

BIS-11

0.84

0.72 – 0.80

Brief COPE

0.81

0.70 – 0.79

These values surpass the acceptable threshold of 0.70 (Nunnally & Bernstein, 1994), indicating good internal consistency.

• **Test-Retest Reliability:** Intraclass correlation coefficients (ICCs) ranged from 0.75 to 0.82, demonstrating acceptable temporal stability.
• **Item-Total Correlations:** Item analyses revealed that all items had corrected item-total correlations above 0.30, affirming that each item contributed adequately to its respective scale.

Additional Psychometric Evaluations

• **Split-Half Reliability:** For DERS and BIS-11, split-half reliability coefficients were computed, yielding values of 0.79 and 0.77, respectively, further confirming internal consistency.
• **Inter-rater Reliability:** Not applicable, as data were self-reported.

Results and Analysis

Data Analyses were conducted using IBM SPSS Statistics (Version 28). Descriptive and inferential statistics were applied to assess differences between the AUD and MSUD groups in terms of emotional regulation, impulsivity, and coping strategies, and to examine correlations among these variables.

Descriptive Statistics

Table 1 provides summary statistics for age and gender distribution across the AUD and MSUD groups.

No significant differences were found in age or gender distribution between the two groups (p > .05), indicating demographic comparability.

Comparison of Emotional Regulation, Impulsivity, and Coping.

Emotional Regulation (DERS Scores)

An independent samples t-test showed that MSUD participants reported significantly higher difficulties in emotional regulation than AUD participants:

t(198) = -4.13, p < .001, Cohen's d = 0.58

This supports Hypothesis 1, confirming that MSUD individuals exhibit significantly greater emotion regulation difficulties, consistent with findings by.[10,3]

Impulsivity (BIS-11 Scores)

A significant difference was also observed in total impulsivity scores:

t(198) = -3.78, p < .001, Cohen's d = 0.54

These findings support Hypothesis 2 and align with previous research suggesting higher impulsivity among polysubstance users.[4, 16]

Coping Strategies (Brief COPE)

MSUD participants were significantly more likely to use maladaptive coping strategies (e.g., denial, behavioural disengagement, and substance use as coping) and less likely to use adaptive strategies such as active coping and planning:

Maladaptive Coping: t(198) = -3.29, p = .001, Cohen's d = 0.47

Adaptive Coping: t(198) = 2.81, p = .005, Cohen's d = 0.40

These findings support Hypothesis 3, confirming previous research that associates MSUD with poorer coping profiles (Carver, 1997; Hasking et al., 2011).

Correlational Analysis

Pearson correlations were conducted to explore interrelationships among the psychological variables.

• Higher emotional dysregulation (DERS) was significantly correlated with greater impulsivity (r = .51, p < .01) and lower adaptive coping (r = -.43, p < .01).
• Impulsivity was negatively correlated with adaptive coping (r = -.38, p < .01).

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- These results support Hypothesis 4 and are in line with previous findings (Tull et al., 2011; Aldao et al., 2010).

Group-Specific Correlational Differences

- Fisher's z-tests showed that the correlations between emotional regulation and impulsivity were significantly stronger in the MSUD group than in the AUD group (z = 2.13, p = .03), supporting Hypothesis 5 that the strength of associations varies by group.

Regression Analysis

- A multiple regression was conducted to determine the predictors of maladaptive coping. Emotional dysregulation and impulsivity were entered as predictors.

- Model Summary: R^2 = .39, $F_{(2, 197)}$ = 63.02, p < .001

- Beta Weights:

DERS: β = .47, p < .001

BIS-11: β = .29, p < .001

This suggests that both emotional dysregulation and impulsivity significantly predict maladaptive coping behavior, with emotional dysregulation being the stronger predictor.

Conclusion

There is robust empirical evidence confirming significant psychological differences between individuals with AUD and MSUD. As hypothesised, MSUD participants reported more difficulties with emotional regulation, higher impulsivity, and poorer coping strategies. These findings support the integration of emotion- and impulse-focused therapeutic components in interventions, especially for MSUD populations.

References

1. Gross, J. J. (2015). Emotion regulation: Current status and future prospects. Psychological Inquiry, 26(1), 1–26. https://doi.org/10.1080/1047840X.2014.940781

2. Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. Clinical Psychology Review, 30(2), 217–237. https://doi.org/10.1016/j.cpr.2009.11.004

3. Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. Journal of Personality and Social Psychology, 56(2), 267–283. https://doi.org/10.1037/0022-3514.56.2.267

4. Feingold, D., Brill, S., Goor-Aryeh, I., Delayahu, Y., & Lev-Ran, S. (2021). Emotional regulation difficulties and risk of substance use relapse: The mediating role of craving. Journal of Substance Use, 26(2), 158–163. https://doi.org/10.1080/14659891.2020.1767833

5. Verdejo-García, A., Lawrence, A. J., & Clark, L. (2008). Impulsivity as a vulnerability marker for substance-use disorders: Review of findings from high-risk research, problem gamblers and genetic association studies. Neuroscience & Biobehavioral Reviews, 32(4), 777–810. https://doi.org/10.1016/j.neubiorev.2007.11.003

6. Moeller, F. G., Barratt, E. S., Dougherty, D. M., Schmitz, J. M., & Swann, A. C. (2001). Psychiatric aspects of impulsivity. American Journal of Psychiatry, 158(11), 1783–1793. https://doi.org/10.1176/appi.ajp.158.11.1783

7. Hasking, P. A., Lyvers, M., & Carlopio, C. (2011). The relationship between coping strategies, alcohol expectancies, drinking motives and drinking behaviour. Addictive Behaviors, 36(5), 479–487. https://doi.org/10.1016/j.addbeh.2011.01.014

8. Kober, H., & Bolling, D. (2014). Emotion regulation in substance use disorders. In J. J. Gross (Ed.), Handbook of Emotion Regulation (2nd ed., pp. 428–446). Guilford Press.

9. Stasiewicz, P. R., Bradizza, C. M., Gudleski, G. D., Coffey, S. F., & Schlauch, R. C. (2013). Affect regulation training (ART) for alcohol use disorders: Development of a novel intervention for negative affect drinkers. Journal of Substance Abuse Treatment, 45(5), 433–443. https://doi.org/10.1016/j.jsat.2013.06.011

10. Weiss, N. H., Tull, M. T., Viana, A. G., Anestis, M. D., & Gratz, K. L. (2015). Impulsive behaviors as an emotion regulation strategy: Examining associations between PTSD, emotion dysregulation, and impulsive behaviors among substance dependent inpatients. Journal of Anxiety Disorders, 30, 88–95. https://doi.org/10.1016/j.janxdis.2014.12.004

11. 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. https://doi.org/10.1038/nrn3119

12. Whelan, R., Watts, R., Orr, C. A., Althoff, R. R., & Garavan, H. (2014). Neuropsychosocial profiles of current and future adolescent alcohol misusers. Nature, 512(7513), 185–189. https://doi.org/10.1038/nature13402

13. Evenden, J. L. (1999). Varieties of impulsivity. Psychopharmacology, 146(4), 348–361. https://doi.org/10.1007/PL00005481

14. Bjork, J. M., Hommer, D. W., Grant, S. J., & Danube, C. (2004). Impulsivity in abstinent alcohol-dependent patients: Relation to control subjects and type 1-/type 2-like traits. Alcohol, 34(2-3), 133–150. https://doi.org/10.1016/j.alcohol.2004.06.012

15. Loeber, S., Duka, T., Welzel, H., Nakovics, H., Heinz, A., & Flor, H. (2000). Impairment of cognitive abilities and decision making after chronic use of alcohol: Relationship to relapse. European Psychiatry, 14,

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J. Adv. Res. Humani. Social Sci. 2025; 12(2)

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306–313.

16. Perry, J. L., & Carroll, M. E. (2008). The role of impulsive behavior in drug abuse. Psychopharmacology, 200(1), 1–26. https://doi.org/10.1007/s00213-008-1173-0

17. Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer Publishing Company.

18. Cooper, M. L., Russell, M., & George, W. H. (1992). Coping, expectancies, and alcohol abuse: A test of social learning formulations. Journal of Abnormal Psychology, 101(4), 551–561. https://doi.org/10.1037/0021-843X.101.4.551

19. Khantzian, E. J. (1997). The self-medication hypothesis of substance use disorders: A reconsideration and recent applications. Harvard Review of Psychiatry, 4(5), 231–244. https://doi.org/10.3109/10673229709030550

20. Zemore, S. E. (2007). A role for spiritual change in the benefits of 12-step involvement. Drug and Alcohol Dependence, 90(2–3), 138–145. https://doi.org/10.1016/j.drugalcdep.2007.03.004

21. Monti, P. M., Rohsenow, D. J., Colby, S. M., & Abrams, D. B. (2001). Brief interventions for alcohol dependence. Guilford Press.

22. Verdejo-García, A., Pérez-García, M., & Bechara, A. (2007). Emotion, decision-making and substance dependence: A somatic-marker model of addiction. Current Neuropharmacology, 5(4), 313–329. https://doi.org/10.2174/157015907782793653

23. Martin, C. S., Clifford, P. R., Clapper, R. L., & Sher, K. J. (2014). Personality, coping, and alcohol use disorder: A study of risk and resilience. Addiction, 109(1), 59–71. https://doi.org/10.1111/add.12357