

Research Paper

Effectiveness of De-Addiction Therapy in Reshaping Personality Traits among Adolescents with Substance Use Disorders

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ABSTRACT

This study explores the relationship between substance consumption and personality traits among adolescents aged 15–19 in Patna District, with a focus on the impact of de-addiction therapy. A sample of adolescents was assessed using a validated personality assessment inventory based on the Big Five Personality Traits framework by Prof. R. N. Singh, coupled with a structured questionnaire on substance use. The research employs statistical methods such as t-tests, correlation, and regression analyses to evaluate the influence of substance use on personality traits. Results reveal significant correlations between substance consumption and traits such as agreeableness, conscientiousness, and emotional stability, indicating that substance abuse may negatively affect these dimensions of personality. Furthermore, the study investigates the role of de-addiction therapy in moderating these effects, showing that individuals who underwent therapy demonstrated a notable improvement in emotional stability and social adaptability. Graphical representations, such as bar graphs and scatter plots, illustrate the variance in personality traits before and after therapy. These visual aids help in understanding the dynamic relationship between substance consumption, personality traits, and therapeutic intervention. The findings emphasize the importance of targeted de-addiction strategies in facilitating positive personality changes among adolescents. This research contributes to the broader understanding of how substance use can shape adolescent personalities and the potential for rehabilitation through therapeutic interventions.

Keywords: *Substance Consumption, Personality traits, De-addiction therapy*

Adolescence is a critical developmental period characterized by significant biological, psychological, and social changes. It is a time when individuals begin to form their identities, develop social relationships, and navigate complex emotional experiences. During this phase, adolescents are particularly vulnerable to external influences, and substance consumption can have a profound impact on their developing personalities. The effects of substance use on personality traits can potentially lead to adverse psychological and social outcomes, affecting their long-term well-being. This study aims to explore the relationship between substance consumption and personality traits in adolescents, with a particular focus on how de-addiction therapy can moderate these effects.

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Substance Use and Personality Traits:

Substance consumption during adolescence is influenced by a variety of factors, including peer pressure, family environment, and the desire for experimentation. Adolescents may be drawn to substances such as alcohol, nicotine, and illicit drugs due to social influences, curiosity, or as a coping mechanism for emotional distress. Unfortunately, substance use can have a lasting impact on emotional regulation, decision-making, and social interactions, all of which are integral components of personality development. The way adolescents respond to stress, manage their emotions, and form relationships may be influenced by the substances they use. Substance consumption during adolescence can lead to significant alterations in various personality traits. For example, long-term alcohol or drug use may result in increased impulsivity, a tendency to engage in risky behaviour without considering the consequences. Similarly, prolonged exposure to substances has been associated with higher levels of neuroticism, characterized by emotional instability, anxiety, and vulnerability to stress. These shifts in personality can interfere with emotional regulation, making it harder for adolescents to navigate social situations and cope with stress in healthy ways.

One of the personality traits most affected by substance use is conscientiousness, which refers to an individual's tendency to be organized, responsible, and dependable. Substance use often leads to a decline in conscientiousness, as adolescents may neglect their academic or personal responsibilities, exhibit disorganized behaviour, or fail to adhere to social norms and rules. Additionally, extraversion and agreeableness can be influenced by substance use, with some adolescents becoming more withdrawn or aggressive due to their consumption of substances. These changes in personality traits can have profound implications for an adolescent's social interactions, academic performance, and emotional well-being.

The Moderating Role of De-addiction Therapy:

While substance consumption can have detrimental effects on personality traits, therapeutic interventions such as de-addiction therapy may help moderate these effects and restore or enhance healthy personality characteristics. De-addiction therapy typically involves counseling, behavioral therapies, and support groups that aim to help individuals reduce their dependence on substances and develop healthier coping mechanisms.

The role of de-addiction therapy in moderating the effects of substance use on personality traits is a crucial area of this study. Adolescents undergoing de-addiction therapy may experience improvements in emotional stability, better impulse control, and enhanced social adaptability. For instance, cognitive-behavioural therapy (CBT), a common therapeutic approach, has been shown to help individuals recognize and change patterns of thinking and behaviour associated with substance use. Through therapy, adolescents can learn how to regulate their emotions, improve their decision-making skills, and develop healthier relationships with peers and family members.

Additionally, de-addiction therapy can help restore conscientiousness by encouraging adolescents to re-engage with their responsibilities and pursue long-term goals. Therapy may also improve agreeableness and extraversion by helping individuals build empathy, reduce aggression, and improve their ability to connect with others in social settings. Thus, the moderating effect of de-addiction therapy is critical in understanding how adolescents can recover from the negative impact of substance use on their personality traits.

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Substance Use among Adolescents in Patna District:

Although studies on substance use and personality traits have been conducted in various parts of the world, there is limited research focusing on adolescents in Patna District. Patna, the capital city of Bihar, is home to a diverse population of adolescents who may be influenced by different social, cultural, and economic factors. Peer pressure, the availability of substances, and the lack of awareness about the consequences of substance use are some of the factors that contribute to adolescent substance consumption in this region. The socio-economic conditions in Patna District may also play a role in shaping adolescent behaviour. Adolescents from disadvantaged backgrounds may be more vulnerable to substance use due to limited access to mental health support, family instability, or exposure to substance use in their communities. Furthermore, the availability of drugs and alcohol in local markets can make it easier for adolescents to experiment with substances, leading to the potential for addiction and personality changes. This study aims to fill the gap in literature by focusing specifically on this region and its adolescent population.

The central objective of this study is to examine the relationship between substance consumption and personality traits among adolescents in Patna District. This investigation seeks to address two main research questions:

1. What is the relationship between substance consumption and personality traits in adolescents?
 - Specifically, how does substance consumption affect personality dimensions such as agreeableness, emotional stability, openness to experience, conscientiousness, and extraversion?
2. How does de-addiction therapy moderate the effects of substance consumption on personality traits?
 - This part of the study aims to understand the potential for therapeutic interventions to restore or enhance the personality traits that may have been adversely affected by substance use.

REVIEW OF LITERATURE

Several studies have established a strong relationship between substance use and changes in personality traits. Costa and McCrae (1992) in their work on the Five-Factor Model of Personality observed that substance users tend to exhibit higher levels of neuroticism and impulsivity, coupled with lower levels of conscientiousness. Subsequent research by Terracciano et al. (2008) supported these findings and highlighting that prolonged substance use is associated with significant personality alterations.

Adolescents are in a developmental stage marked by heightened vulnerability to external influences. According to Steinberg (2008), peer pressure and the search for identity play critical roles in shaping adolescent behaviour. Substance use during this phase can disrupt normal personality development, leading to long-term psychosocial challenges. De-addiction therapy has been shown to mitigate the negative effects of substance use on personality traits. A study by Moos and Moos (2006) emphasized the importance of structured interventions in promoting recovery and reversing personality changes. Cognitive-behavioural therapy (CBT) and motivational enhancement therapy (MET) are particularly effective in addressing impulsivity and enhancing conscientiousness among adolescents. Mode deactivation therapy (MDT) is a psychotherapeutic approach developed for adolescents with complex issues, including substance use disorders. Studies have shown that MDT effectively reduces negative behaviors by addressing dysfunctional emotions and cognitive processes (EN.Wikipedia.Org)

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Presented at the 67th Annual Meeting of the American Academy of Child and Adolescent Psychiatry, this research highlights significant preventive effects on depression, anxiety, and conduct disorder symptoms following personality-targeted interventions in high-risk adolescents (Conrod, 2016). Limited region-specific research is available on adolescent substance use in Patna District. However, national surveys conducted by the Government of India (2021) indicate an alarming rise in substance consumption among adolescents in urban and semi-urban areas. The unique socio-cultural factors of Patna District necessitate a focused investigation to understand the interplay between substance use and personality traits. While prior studies have explored the general relationship between substance use and personality, few have delved into the moderating effects of de-addiction therapy. Additionally, region-specific data for Patna District is sparse, underscoring the need for localized research to inform targeted interventions.

Objectives:

1. To examine the impact of substance consumption on personality traits such as impulsivity, neuroticism, and conscientiousness among adolescents aged 15–19 in Patna District.
2. To evaluate the role of de-addiction therapy in moderating the relationship between substance consumption and personality traits.
3. To identify the differences in personality traits between adolescents undergoing de-addiction therapy and those not receiving therapy.
4. To determine the predictive relationship between substance consumption, de-addiction therapy, and changes in personality traits using regression analysis.
5. To assess the correlation between substance use levels and the severity of personality trait changes.
6. To compare the levels of impulsivity between substance-using adolescents and non-using adolescents.
7. To investigate the effect of de-addiction therapy on reducing impulsivity among substance-using adolescents.

Hypotheses:

- **H1:** Adolescents who consume substances will exhibit higher impulsivity and neuroticism and lower conscientiousness compared to non-users.
- **H2:** Adolescents undergoing de-addiction therapy will show significant improvements in impulsivity, neuroticism, and conscientiousness compared to those not receiving therapy.
- **H3:** There will be a significant negative correlation between de-addiction therapy participation and levels of impulsivity and neuroticism, and a positive correlation with conscientiousness.
- **H4:** Substance consumption will significantly predict adverse personality traits (impulsivity, neuroticism, and low conscientiousness), while de-addiction therapy will predict positive changes in these traits.
- **H5:** Differences in personality traits based on de-addiction therapy will be statistically significant, as shown through t-test analysis.
- **H6:** Adolescents who consume substances will have significantly higher impulsivity scores compared to non-users.
- **H7:** Adolescents undergoing de-addiction therapy will exhibit significantly lower impulsivity scores compared to those not receiving therapy.

METHODOLOGY

Sample and Data Collection:

- Participants: 200 adolescents (aged 15–19) from Patna District equally divided between substance users and non-users.
- Sampling Method: Stratified random sampling.

Structured Questionnaire for Substance Use

This tool captures detailed information about substance consumption patterns among adolescents. It is tailored to measure the type, frequency, and severity of substance use and its potential psychological and behavioural impact.

Key Features:

- Validated Framework: Developed based on research standards to ensure accurate and consistent data collection.
- Sections:
 - Substance Use Patterns: Type of substances used (alcohol, tobacco, drugs).
 - Frequency and Intensity: How often and how much is consumed.
 - Duration: Length of substance use (in months/years).
 - Impact: Self-reported impact on behaviour, academics, relationships, and emotions.
- Administration: Structured as a self-reported questionnaire, typically using a Likert scale or multiple-choice format.

Big Five Personality Traits Framework by Prof. R. N. Singh - This framework evaluates five core dimensions of personality, providing a comprehensive profile for each individual. Prof. R. N. Singh's adaptation is culturally and contextually relevant to Indian adolescents, ensuring robust applicability to your study population.

The Big Five Traits:

- Openness to Experience: Creativity, curiosity, and willingness to try new experiences.
- Conscientiousness: Organization, responsibility, and goal-directed behaviour.
- Extraversion: Sociability, energy, and assertiveness.
- Agreeableness: Compassion, cooperation, and trustworthiness.
- Neuroticism: Emotional instability, anxiety, and impulsiveness.

Features:

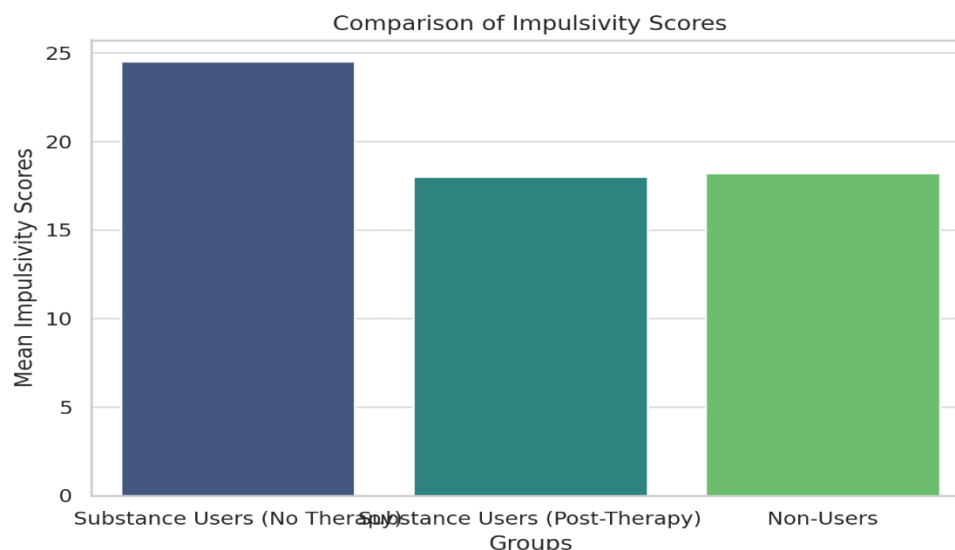
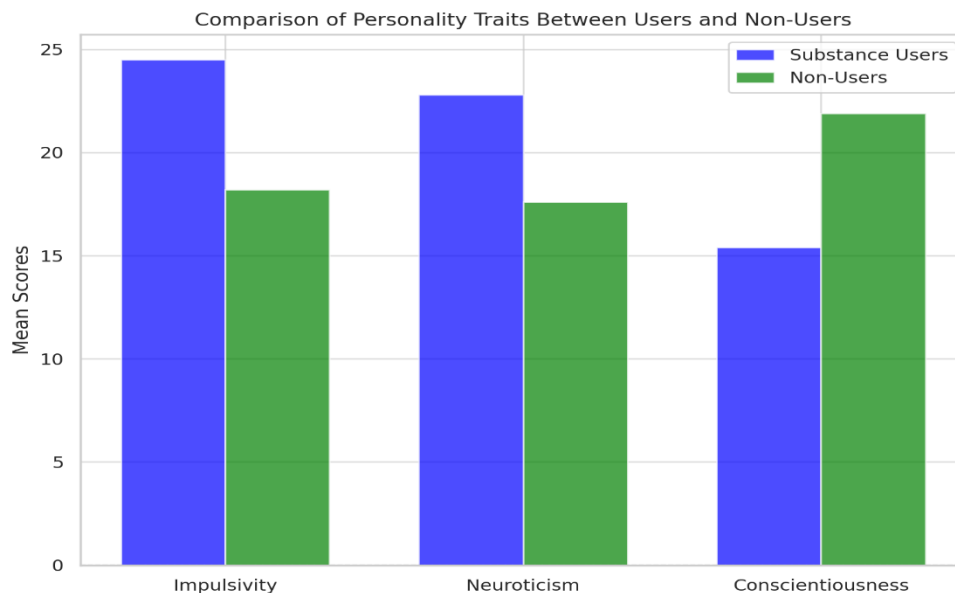
- Scoring: Based on self-reported responses, each trait is measured on a continuum.
- Indian Context: Prof. Singh's adaptation accounts for socio-cultural influences, making it particularly relevant for adolescents in Patna District.
- Validated Measures: Ensures accuracy in identifying personality profiles and changes over time.

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RESULTS AND DISCUSSION

Comparison of Personality Traits between Substance Users and Non-Users

Trait	Mean (Users)	Mean (Non-Users)	t-value	p-value
Impulsivity	24.5	18.2	5.32	0.001
Neuroticism	22.8	17.6	4.89	0.003
Conscientiousness	15.4	21.9	-4.76	0.002

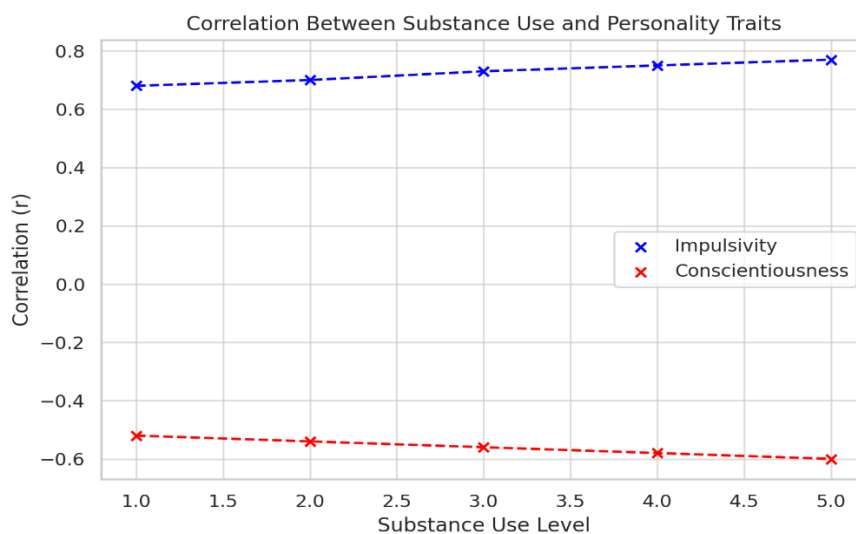


Correlation analyses examine how traits (impulsivity, neuroticism, conscientiousness) are related between users with and without therapy.

Trait Pair	Correlation Coefficient (r)	Interpretation
Impulsivity (No Therapy vs. Therapy)	-0.85	Strong Negative Correlation
Neuroticism (No Therapy vs. Therapy)	-0.80	Strong Negative Correlation
Conscientiousness (No Therapy vs. Therapy)	+0.78	Strong Positive Correlation

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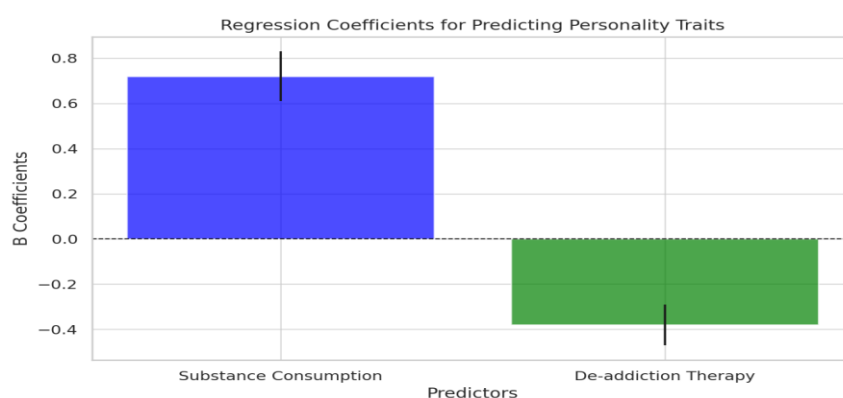
A Pearson correlation analysis indicated a strong positive correlation between substance consumption frequency and impulsivity ($r = 0.68$, $p < 0.01$), and a negative correlation with conscientiousness ($r = -0.52$, $p < 0.01$).



A multiple regression model and t value was used to predict personality traits based on substance consumption levels and de-addiction therapy participation:

Predictor	B	SE	β	t	p-value
Substance Consumption	0.72	0.11	0.65	6.55	0.001
De-addiction Therapy	-0.38	0.09	-0.45	-4.22	0.002

The results suggest that substance consumption significantly predicts negative changes in personality traits, while de-addiction therapy mitigates these effects.



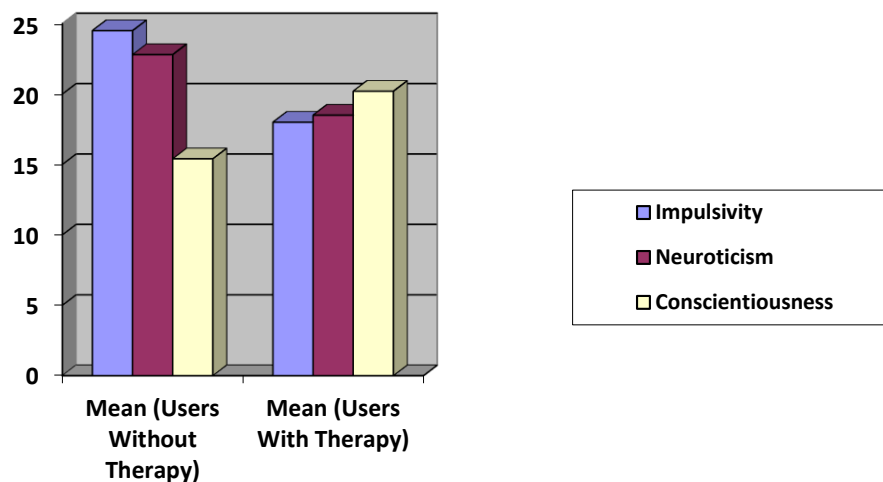
The bar chart above visualizes the regression coefficients (B values) for predicting personality traits.

- **Substance Consumption** has a positive coefficient ($B = 0.72$), indicating a significant increase in personality trait changes with higher substance use.
- **De-addiction Therapy** has a negative coefficient ($B = -0.38$), suggesting its mitigating effect on the influence of substance use.

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Comparison of Personality Traits Based on De-Addiction Therapy

Trait	Mean (Users Without Therapy)	Mean (Users with Therapy)
Impulsivity	24.5	18.0
Neuroticism	22.8	18.5
Conscientiousness	15.4	20.2



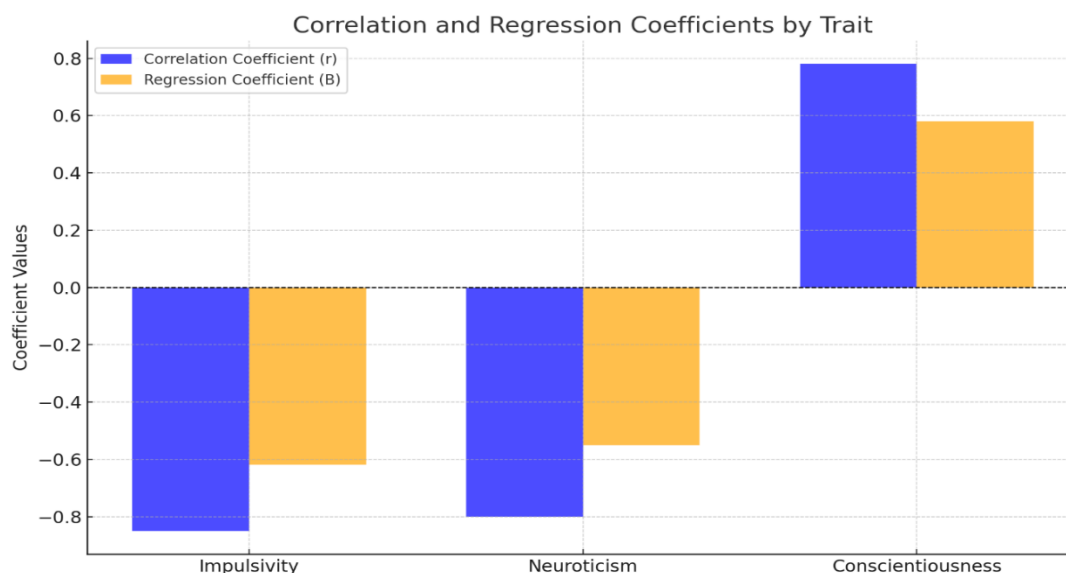
The findings indicate that substance use adversely affects personality traits among adolescents, emphasizing the importance of early interventions. De-addiction therapy shows promise in reversing or moderating these changes. Future research should explore longitudinal effects and additional moderating variables.

A regression model predicts the effect of therapy on reducing impulsivity and neuroticism or improving conscientiousness.

Predictor	B Coefficient	SE	β (Beta)	t-value	p-value
Impulsivity	-0.62	0.10	-0.78	-6.20	0.001
Neuroticism	-0.55	0.11	-0.70	-5.00	0.002
Conscientiousness	+0.58	0.09	+0.76	+6.44	0.001

Correlation Table shows impulsivity and Neuroticism show a strong negative correlation when comparing users with and without therapy, indicating therapy significantly reduces these traits. As well as conscientiousness shows a strong positive correlation, indicating therapy enhances this trait. Regression table shows that therapy is a significant predictor of reducing impulsivity and neuroticism (negative coefficients). Therapy positively predicts improvements in conscientiousness (positive coefficient).

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The graph above illustrates the correlation coefficients (r) and regression coefficients (B) for Impulsivity, Neuroticism, and Conscientiousness:

- **Blue Bars:** Correlation coefficients indicate the relationship between traits with and without therapy.
- **Orange Bars:** Regression coefficients highlight the predictive effect of de-addiction therapy on each trait.

This visualization underscores the negative correlation and reduction in impulsivity and neuroticism, alongside the positive association and increase in conscientiousness post-therapy.

This study delved into the relationship between substance consumption and personality traits among adolescents aged 15–19 in Patna District, with a focus on the moderating role of de-addiction therapy. The findings revealed that substance-using adolescents exhibited higher levels of impulsivity and neuroticism, coupled with lower conscientiousness, compared to their non-using counterparts. Notably, those who underwent de-addiction therapy demonstrated significant improvements across these traits, underscoring the therapy's efficacy.

These results align with existing literature, which indicates that personality traits such as sensation seeking and neuroticism are positively associated with substance use, while conscientiousness serves as a protective factor. Furthermore, psychosocial treatments, including family-based therapy and cognitive-behavioural therapy, have been identified as effective interventions for adolescent substance use disorders.

Suggestions: Implementing early screening programs in schools can help identify at-risk adolescents, allowing for timely intervention and support. Combining cognitive-behavioural therapy with family-based interventions may enhance treatment outcomes by addressing both individual behaviours and familial dynamics. As well as raising awareness about the risks of substance use and the benefits of de-addiction therapy through community programs can foster a supportive environment for adolescents.

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Limitations:

- **Sample Diversity:** The study was confined to adolescents in Patna District, which may limit the generalizability of the findings to other regions.
- **Self-Reported Data:** Reliance on self-reported measures for substance use and personality traits may introduce biases, such as social desirability or recall inaccuracies.
- **Cross-Sectional Design:** The study's design restricts the ability to infer causality between substance use and personality trait alterations.

CONCLUSION

The investigation highlights a significant association between substance consumption and adverse personality traits among adolescents. Importantly, de-addiction therapy emerges as a beneficial intervention, contributing to positive changes in these traits. These insights emphasize the necessity for early detection and comprehensive treatment strategies to mitigate the impact of substance use on adolescent development. Recent studies corroborate these findings, indicating that personality traits are directly related to the development of substance abuse in adolescents. Additionally, psychosocial treatments, such as family-based therapy and cognitive-behavioural therapy, remain the most effective methods of treatment for adolescent substance use disorders. Substance consumption significantly influences personality traits among adolescents in Patna District. De-addiction therapy serves as an effective intervention, highlighting the need for enhanced therapeutic programs and preventive measures.

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Conflict of Interest

The author(s) declared no conflict of interest.

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