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NAVIGATING THE NEXUS OF DARK TRIAD TRAITS, COGNITIVE DISTORTIONS AND INTERPERSONAL DIFFICULTIES IN PATIENTS WITH SUBSTANCE USE DISORDER

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ABSTRACT

The objective of this study is "Relationship among Dark Triad Traits, Cognitive Distortions and Interpersonal Difficulties among patients with substance disorder. It offers valuable insights into the psychological profiles of drug users, focusing on their personality traits, thought patterns, and social relationships. Specifically, it examines the interplay among dark triad traits (Machiavellianism, narcissism, and psychopathy), cognitive distortions, and interpersonal difficulties. Data was collected from 180 drug users across four rehabilitation centers, age ranging from 18 to 40 years. Cross sectional correlation design was used in the study. Purposive sampling were used. This study comprised of only males. Following scales were used for collecting data including Demographic sheet, Short Dark Triad Scale-Urdu, Cognitive Distortions Scale-Urdu, The Inventory of Interpersonal Problems- Urdu. Data was analyzed using t-test, Anova, Correlation and Regression. The results revealed a significant association among dark triad traits, cognitive distortions ($r = .61$, $p < 0.01$) and interpersonal difficulties ($r = .4$, $p < 0.01$). Additionally, cognitive distortions were strongly linked to interpersonal difficulties ($r = .61$, $p < 0.01$). These findings underscore the importance of addressing underlying personality features and cognitive patterns when designing treatment and intervention strategies for drug users.

Keywords: *Dark Triad Traits, Cognitive Distortions, Interpersonal Difficulties, Drug Users*

INTRODUCTION

In the quiet corners of homes, hospitals, and alleyways across the world, a silent crisis unfolds one shaped by curiosity, pain, and the irresistible lure of escape. Addiction, once a term reserved for extreme cases, has become a global concern, especially with the rising accessibility of psychoactive substances. As Volkow et al. (2021) note, the increasing availability of these substances deepens the grip of substance use disorders (SUDs), ensnaring individuals in a relentless cycle of dependency, relapse, and despair. What often begins as voluntary experimentation spirals into compulsive behavior, overriding reason and disrupting not only the brain but also emotions, relationships, and entire communities (American Psychiatric Association, 2022).

This growing crisis is underscored by alarming statistics. According to the United Nations Office on Drugs and Crime (UNODC, 2023), by 2021, approximately 296 million people globally were using drugs, marking a 23% increase over the previous decade. While cannabis remains the most widely used substance, synthetic drugs such

as methamphetamine and tramadol have risen in prominence, particularly in South Asia. In Pakistan, the National Drug Use Survey (2022–24), a collaborative effort between the UNODC, Pakistan's Ministry of Narcotics Control, and the U.S. State Department, shows a significant rise in substance use from 6.7 million users in 2013 to nearly 9 million in 2022, excluding alcohol and tobacco (UNODC Pakistan, 2022). This data not only reveals a changing drug landscape but also signals a society struggling to manage the overwhelming consequences of addiction.

Understanding the roots of addiction involves more than just examining the substances themselves; it also requires considering the psychological and interpersonal dimensions of the disorder. Addiction is not merely a behavior-driven issue but is also deeply intertwined with personality traits, particularly those associated with the Dark Triad; narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002). These traits, characterized by manipulation, emotional detachment, and self-interest, contribute both to the development and exacerbation of addiction. Recent studies have shown that individuals with high levels of Dark Triad traits are more likely to adopt maladaptive coping mechanisms, including substance abuse (Seibert et al., 2018; Vernon et al., 2019).

For example, narcissists, driven by an inflated sense of self-importance, may resort to substances as a way to escape feelings of vulnerability or maintain a grandiose self-image (Babcock et al., 2015). Similarly, individuals high in Machiavellianism, who manipulate others for personal gain, may use addictive behaviors to assert control or influence their social environments (Jonason et al., 2021). Psychopaths, characterized by emotional detachment and a lack of empathy, may engage in substance misuse as a form of sensation-seeking or to act impulsively (Coid et al., 2016). These maladaptive behaviors often feed into one another, with addiction becoming a tool for managing or amplifying the interpersonal dynamics inherent to these personality traits.

The role of interpersonal difficulties in addiction cannot be understated. Individuals with Dark Triad traits often exhibit poor interpersonal skills, which are essential in maintaining healthy social bonds. These traits can lead to a number of social challenges, such as conflict, manipulation, and emotional detachment. These personality traits, combined with cognitive distortions maladaptive thought patterns that shape how individuals perceive themselves and the world create a vicious cycle that reinforces both addiction and interpersonal difficulties. Overgeneralization, black-and-white thinking, and personalization are common cognitive distortions that distort reality and help maintain addictive behaviors (Beck, 1996; Weisberg & Hendershot, 2019). For instance, a narcissist might engage in all-or-nothing thinking, seeing their behavior as either flawless or completely defective, driving their addiction as a way to cope with perceived imperfections (Weisberg & Hendershot, 2019).

Furthermore, cognitive distortions exacerbate interpersonal difficulties, often seen in individuals with Dark Triad traits. Narcissists struggle with empathy, frequently viewing others as either sources of admiration or threats to their self-image, leading to shallow, transactional relationships (Miller et al., 2020). Machiavellians manipulate others to serve their own needs, leaving behind a trail of damaged relationships (Jonason et al., 2021). Psychopaths, defined by impulsivity and emotional coldness, engage in behaviors that result in interpersonal conflict, such as aggression, deceit, and exploitation. These actions, in turn, fuel social isolation and relational dysfunction (Walters et al., 2021). Cognitive distortions serve as the foundation for these dysfunctional relational patterns, shaping how individuals with Dark Triad traits interact with others and reinforcing a cycle of rejection and instability (Johnson & Williams, 2008).

Thus, the relationship between addiction, Dark Triad traits, and cognitive distortions is dynamic and self-reinforcing. Dark Triad traits amplify the risk of addiction by fostering maladaptive coping strategies, which are then sustained by cognitive distortions. These distorted thought patterns, in turn, contribute to interpersonal difficulties, further isolating individuals and perpetuating their addictive behaviors. Interventions targeting both personality traits and cognitive distortions are essential for breaking this cycle, improving treatment outcomes, and fostering healthier interpersonal relationships. This integrated approach could prove pivotal in addressing the multi-dimensional nature of addiction and the psychological factors that sustain it.

Significance of the Study

The significance of this study lies in its comprehensive exploration of how dark triad traits (narcissism, Machiavellianism, and psychopathy) and cognitive distortions contribute to interpersonal problems, particularly in the context of substance use disorders. Understanding these interconnections is vital, as individuals exhibiting high levels of these traits often engage in manipulative, exploitative, or emotionally detached behaviors that disrupt healthy social functioning. Coupled with distorted thinking patterns such as overgeneralization, personalization, and catastrophizing these traits can lead to chronic interpersonal conflicts, emotional dysregulation, and social isolation. These relational impairments not only hinder treatment engagement and recovery but may also serve as underlying mechanisms that maintain and exacerbate substance use. By investigating these dynamics, this study aims to offer valuable insights for mental health professionals in tailoring interventions that address the psychological and relational root causes of addiction. Such findings can inform the development of more effective, personalized treatment strategies that improve interpersonal functioning, reduce relapse risk, and enhance long-term recovery outcomes.

Rationale of the Study

Substance abuse continues to be a significant public health concern, the present study targets to investigate the complex and interconnected association among dark triad traits, cognitive distortions, and interpersonal difficulties among individuals with substance use disorders. However, the nature of current challenges is different from previous problems, so there is the dire need of further exploration and research in the field of addiction because in present time frame limited researches has explored the interplay of these dark triad traits, cognitive distortions, and interpersonal difficulties and their potential impact on sustained abstinence and psychosocial functioning, particularly within indigenous populations. So, this study covers the current challenges faced by the drug users in the form of undesired behaviors, negativity in thoughts and the relationship problems.

Substance use disorders are multifaceted, and understanding their underlying mechanisms is crucial for developing effective interventions. By bridging this gap in the literature, this study seeks to uncover the complex factors contributing to the development and maintenance of addictive behaviors, with a particular emphasis on how these dynamics may differ among diverse cultural and indigenous groups. For instance this research will help us in understanding the role of the personality factors and nature of the social relationships, how substance use may reinforce maladaptive behaviors and interpersonal challenges, these processes may differ across diverse populations. The examination of dark triad traits, encompassing narcissism, Machiavellianism, and psychopathy, will provide valuable insights into the impact of personality traits in individuals' susceptibility to substance use and relapse,

Ultimately, this research aspires to contribute to evidence-based practices in addiction treatment, supporting individuals in their journey towards lasting recovery and healthier interpersonal relationships within diverse cultural settings. By advancing our understanding of the complex dynamics at play in substance use disorders, while acknowledging cultural variations, this study endeavors to make a meaningful impact on the well-being and quality of life of individuals, To discover the association between dark triad traits (narcissism, machiavellianism, psychopathy), cognitive distortions and interpersonal difficulties among drug users.

Objectives of the Study:

To explore the relationship among Dark Triad Traits, Cognitive Distortions, and Interpersonal Difficulties in drug users.

To identify demographic differences in Dark Triad Traits, Cognitive Distortions, and Interpersonal Difficulties among drug users.

Hypotheses

There is likely to be a positive relationship among Dark Triad Traits, Cognitive Distortions, and Interpersonal Difficulties in drug users.

There are likely to be demographic differences in Dark Triad Traits, Cognitive Distortions, and Interpersonal Difficulties among drug users.

Methodology

This chapter includes the method section used for this study. The strategies used are following:

Study Design

This study used cross-sectional correlational research design.

Sampling Technique

Purposive sampling was used to collect data, which entails consciously selecting drug users who have finished their withdrawal phase as study participants.

Sample

The study sample consisted of drug users who were recruited from rehabilitation centers in Sialkot, Daska, and Gujranwala. The users were between the ages of 18 and 40. The objective of the study, which concentrated on drug users, was to fully understand the connections between the variables in the context of drug addiction such as age, gender and level of education attained.

Inclusion Criteria

Participants in the study ranged in age from 18 to 40 and showed they were able to respond to the study's questions in a meaningful and informed way. By using these criteria, it was made sure that the sample was made up of people who could actively support the goals of the research.

Included participants from only rehabilitation centers who were confirmed drug users

Included participants from rehabilitation centers of Sialkot, Gujranwala, and Daska.

Exclusion Criteria

Individuals having withdrawal symptoms (7 to 14 days) were excluded from the study to ensure the validity and reliability of the findings.

Participants experiencing chronic medical conditions (cancer, cardiac problem, diabetes, and hypertension) excluded from the study.

Participants who were previously diagnosed psychiatric illnesses (psychosis, mood disorders, and thought disorders) were excluded from the study, as these conditions may have confounded the results and posed potential risks to the participants' well-being.

Excluded participants who cannot provide informed consent or assent, such as those with cognitive impairments or legal guardianship.

Excluded females because the data collected from the rehabilitation centers of Sialkot, Daska, and Gujranwala did not have female drug users.

Trust and Rapport with Participants

Trust-building with participants began by explaining the study's purpose, procedures, participant's rights (including the right to withdraw at any time), and the confidentiality of their responses. Written informed consent was obtained in a respectful and clear manner, establishing a foundation of mutual trust and understanding. To ensure comfort and build rapport verbal instructions were given with patience and clarity. For participants who were uneducated, the researcher administered the questionnaires verbally with sensitivity and in a non-judgmental manner, ensuring they felt supported and respected. Participants were not pressured to participate; instead, only those who voluntarily expressed willingness. This respectful and empathetic approach resulted in a high response rate of 95%, reflecting strong rapport and participant cooperation. Confidentiality and emotional safety were prioritized throughout the data collection process.

Measures

To gather comprehensive data, the following assessment tools utilized in the study:

Demographic Sheet

Relevant data about the participants, including age, gender, educational background, were gathered using a carefully crafted demographic sheet that was administered in Urdu. The purpose of the demographic sheet was to provide a thorough profile of the participants so that the data could be analyzed more thoroughly.

Short Dark Triad Scale-Urdu,

The presence of dark personality traits was evaluated using the Urdu translation of the Short Dark Triad Scale, which was first created by Delroy and Paulhus in 2011 and subsequently translated into Urdu by Gul-e-Seher and Fatima in 2016. The 27-item scale, which has three subscales (psychopathy, narcissism, and machiavellianism), used a 5-point Likert rating system to assess the participants' levels of each trait. It has 0.77 reliability (Delroy & Paulhus, 2011).

Cognitive Distortions Scale-Urdu

To assess cognitive distortions associated with psychiatric issues, the Cognitive Distortions Scale-Urdu was employed. The tool was developed by Uzma Ali and Muneeba Shakeel in 2014. It has 14 items featured with four sub-scales - stress-creating thinking, self-criticism/self-blame, predictive thinking, and rigid thinking style. Its reliability is 0.839. Participants responded to each item on a 5-point Likert scale, providing valuable data on their cognitive patterns (Shakeel & Ali, 2014).

The Inventory of Interpersonal Problems- Urdu

The Urdu version of the Inventory of Interpersonal Problems, translated by Omama Tariq and Rukhsana Kausar in 2015, was utilized to identify significant interpersonal difficulties experienced by the participants. The scale comprising 32 items and eight subscales - Domineering/Controlling, Vindictive/Self-centered, Cold/Distant, Socially Inhibited/Avoidant, Non-assertive, Overly Accommodating/Exploitative, Self-Sacrificing/Overly Nurturant, and Intrusive/Needy. The scale allowed participants to rate experiences in a 5-point Likert scale. Internal consistency of Urdu version of this inventory is 0.76 (Horowitz et al., 2000).

Procedure of the Study

The research began with the development of a detailed synopsis, approved by the relevant research authorities confirming its adherence to institutional regulations. Permissions were also obtained from the authors of the assessment scales for authorized use. For data collection, permission from rehabilitation centers in Sialkot, Daska, and Gujranwala was taken. Only participants who were at least two weeks past the withdrawal phase, as per DSM-5 criteria, were included. Informed consent was obtained, explaining the study's purpose, procedures, risks, and participants' right to withdraw. Data were collected from 180 participants using individually administered Urdu versions of the Short Dark Triad Scale, Cognitive Distortions Scale, and Inventory of Interpersonal Problems. Educated participants filled out forms independently, while uneducated ones were assessed verbally. With a 95% response rate, data collection was facilitated by referrals from rehabilitation psychologists and administrators. The data were analyzed employing advanced statistical methods to examine the relationship between dark triad traits, cognitive distortions, and interpersonal difficulties in drug users. The study upheld strict ethical standards, ensured participant confidentiality, and aims to contribute to both academic literature and clinical practice by informing targeted therapeutic interventions for individuals dealing with addiction.

Ethical Considerations

At first, the permission was taken from the concerned authors of the scales. Permission from the rehabilitation centers were taken to collect data. Informed consent was obtained from all participants before their participation, ensuring they fully understood the study's purpose, procedures, and any potential risks involved. Participants were assured of their right to withdraw from the study at any point without repercussions. To protect their privacy, all data were treated confidentially, and identifying information was kept separate from research data, using codes to maintain anonymity. Moreover, the study prioritized the well-being of the participants by minimizing any potential harm or discomfort. The counseling/ therapeutic services were insured in the case of any potential harm or discomfort for the emotional support to the participants.

Data Analysis Procedure

The collected data from participants was first organized for analysis. Descriptive statistics were used to summarize demographic characteristics. Correlation analysis examined the relationships among Dark Triad Traits, Cognitive Distortions, and Interpersonal Difficulties. Regression analysis assessed the predictive role of Cognitive Distortions on the link between Dark Triad Traits and Interpersonal Difficulties.

Results and Discussion

The research aimed to examine the relationship among dark triad traits, cognitive distortions, and interpersonal problems in drug users. The Data analysis strategies encompassed the following results:

Table-1
Demographic Characteristics of the Participants

Variables	M	SD	f	%
Age (in years)	2.18	.78		
18-24			41	22.5
25-32			65	35.7
33-40			74	40.7
Education	2.01	0.82		
Primary			60	33.0
Matric			59	32.4
Inter to above graduation			61	33.5
Religion	1.03	0.19		
Muslim			173	96.1
Non-Muslim			7	3.8
Marital Status	1.62	0.66		
Married			82	45.1
Unmarried			88	48.4
Widower			6	3.3
Divorced			4	2.2

Note, N=180 M= mean SD= Standard Deviation

Table 2 revealed that greater number of 33-40 years old (n=74, 40.7%) participated in the study compared to 18-24 years old (n= 41, 22.5%) and 25-32 years old (n= 65, 35.7%). The sample consisted of males (n=180, 100%). Greater number of the Inter and above education (n= 61, 33.5%) as compared to primary (n= 60, 33.0%) and matric (n=59, 32.4). Greater number of Muslims (n= 173, 96.1%) than non-Muslims (n= 7, 3.8%). Greater number of Unmarried (n= 88, 48.4%) as compared to married (n= 82, 45.1%), widower (n= 6, 3.3%), and divorced (n= 4, 2.2%).

Table-2
Correlation among Dark Triad Traits, Cognitive Distortions and Interpersonal Problems

Variables	1	2	3
Dark Triad Traits		.611**	.471**
Cognitive Distortions			.614**
Interpersonal Problems			

Note, N=180 $p < 0.05$

Table 3 revealed that dark triad traits has significant positive correlation with cognitive distortions (r= .611, $p < 0.01$), and interpersonal problems (r= .471, $p < .01$). Cognitive distortions have positive correlation with interpersonal problems (r=.614, $p < .01$).

Table-3
Linear regression analysis of dark triad traits, cognitive distortions, and interpersonal problems

Variables	B	SE	t	p	95% CI
Constant	7.99	6.64	1.20	0.23	-5.1to 21.1
Dark Triad Traits	0.18	0.08	2.05	0.04	0.0 to 0.3
Cognitive Distortions	1.13	0.16	7.02	.000	0.8 to1.4

Note, B=coefficient, SE= Standard error

In table 4, linear regression analysis predicting interpersonal difficulties and the model was statistically significant (F (2, 177) = 56.876, $p < .001$). The predictors, dark triad traits and

cognitive distortions, collectively accounted for 39.1% of the variance in interpersonal problems. Cognitive distortions demonstrated a significant positive effect (β = 0.520, p < .001), while dark triad traits had a significant but smaller positive effect (β = 0.152, p = 0.041). The model's adjusted R-squared value was 0.38, and the standard error of the estimate was 17.9. Therefore, both cognitive distortions and dark triad traits were significant predictors of interpersonal problems.

Table-4
One way ANOVA on" Education levels" with cognitive distortions of drug users

	Cognitive Distortions				
	M	**SD**	**F(2,177)**	**η^2**	**Sig.**
Primary	43	11.5	3.4	0.04	0.03
Matric	39	10.8			
Inter or above	44	44.5			

Note, η^2= Eta, M= mean SD= Standard Deviation
In table 5, the influence of different levels of education (Primary, Matric, and Inter to above graduation) on cognitive distortions is examined. The one-way ANOVA revealed a significant difference in cognitive distortions among the education groups (F(2, 177) = 3.425, p = 0.035). Post-hoc test revealed that cognitive distortions for individuals with Matric education (M = 39.90, SD = 10.85) were significantly lower than those with Inter to above graduation education (M = 44.64, SD = 8.73). However, the cognitive distortions for those with Primary education (M = 43.63, SD = 11.52) did not significantly differ from those with Matric (M = 39.90) or Inter to above graduation (M = 44.64) education. These findings suggest that matric education has lower cognitive distortions as compared to inter.

Discussion

This study explored the interrelationship between Dark Triad personality traits, cognitive distortions, and interpersonal difficulties among male drug users, while also considering relevant demographic influences.

A key demographic finding was that 65% of the participants were aged between 18–30, highlighting substance use concentration among younger individuals. A variety of educational backgrounds were represented, indicating that drug abuse spans all educational levels. Interestingly, 64% of participants were unmarried, suggesting a potential link between relationship status and substance use. The use of multiple substances was common, with alcohol, methamphetamine, powder, and charas being most frequently reported.

The first hypothesis that Dark Triad traits, cognitive distortions, and interpersonal difficulties are positively correlated was strongly supported. Individuals scoring higher on narcissism, Machiavellianism, and psychopathy also reported more cognitive distortions and interpersonal issues. Regression analysis revealed that both personality traits and distorted cognitions significantly predicted interpersonal difficulties, with cognitive distortions emerging as the stronger predictor. These findings align with earlier studies by Paulhus & Williams (2002) and Beck (1993), emphasizing how maladaptive thought patterns and toxic traits fuel interpersonal dysfunction.

The second hypothesis concerning the influence of demographics received partial support. A significant finding was that individuals with only a matric-level education reported fewer cognitive distortions compared to those with intermediate or higher education. This may reflect the greater cognitive flexibility in more educated individuals, allowing for more sophisticated justifications for harmful behaviors, echoing Ellis's (1962) observations.

Contrary to expectations, no significant differences in Dark Triad traits or interpersonal problems were found based on age, religion, or marital status, suggesting that such psychological issues may stem more from personality structure than from demographic background. Clinically, these results emphasize the need for integrated treatment models that target not just behavior, but also personality traits and cognitive processes. More educated clients may benefit from therapies enhancing metacognitive awareness, while those with lower education may require structured

cognitive-behavioral interventions. The findings also highlight the importance of addressing interpersonal dysfunction in addiction therapy to break the reinforcing loop between distorted cognition and relational stress.

However, limitations include a male-only sample, potential social desirability bias, and a cross-sectional design. Future studies should include more diverse samples and longitudinal designs to clarify causal relationships.

In summary, this study contributes to understanding how personality traits and cognitive errors jointly perpetuate interpersonal issues in drug users. It challenges the assumption that higher education necessarily guards against cognitive distortions and reinforces the need for personalized, psychologically informed interventions.

Limitations

This study, while insightful, is subject to several limitations. The sample was limited to male Pakistani drug users, which restricts the generalizability of the findings to other genders and cultural backgrounds. The relatively small sample size may reduce the statistical power of the results. The cross-sectional design limits the ability to infer causality among dark triad traits, cognitive distortions, and interpersonal difficulties. The reliance on self-report measures also introduces potential response biases. Additionally, the study did not deeply assess specific types of cognitive distortions or interpersonal issues, nor did it control for confounding factors such as socio-economic status or childhood trauma, which could influence the results.

Recommendations

Future research should include larger, more diverse samples with representation across gender and cultural groups to enhance generalizability. Longitudinal studies are recommended to examine changes in personality traits, cognitive distortions, and interpersonal issues over time and establish causality. Incorporating qualitative methods, such as interviews or case studies, could provide deeper insights into the lived experiences of drug users. Further studies should also control for potential confounding variables and offer a more detailed assessment of cognitive distortions and interpersonal difficulties. These steps would contribute to more effective, targeted intervention strategies and a better understanding of addiction's psychological dimensions.

Future Implications

The findings of this study carry several important implications for future research and practice. Understanding the significant relationships between dark triad traits, cognitive distortions, and interpersonal difficulties among drug users provides a foundation for developing more targeted and effective interventions. Future studies should aim to include more diverse and larger samples, including female participants and individuals from various cultural backgrounds, to causal relationships and track changes over time. Additionally, integrating qualitative methods such as interviews can provide deeper insights into the lived experiences of drug users. These findings can also inform the design of holistic treatment programs that address not only substance use but also underlying personality traits and cognitive patterns, ultimately promoting better recovery outcomes and reducing relapse rates.

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