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**Review Article**

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# Insights into Narcissistic Personality Disorder: A Narrative Review with Cultural and Biological Insights from Pakistan

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## ABSTRACT

Narcissistic Personality Disorder (NPD) is a heterogeneous and complicated personality disorder that is marked by grandiosity, admiration, and a lack of empathy. The purpose of this narrative review was to conduct a synthesis of literature on the etiological, diagnostic, genetic, and cultural aspects of NPD in the Pakistani sociocultural setting. The PubMed, PsycINFO, Scopus, and Google Scholar databases were used to conduct a narrative literature review. A search was conducted on peer-reviewed articles that were published from 2019 to 2024 with the keyword's narcissistic personality disorder, genetics, epigenetics, diagnosis, culture, and Pakistan. The relevant studies were applied to such topics as etiology, diagnosis, and cultural influences. The cultural values where collectivism is the dominant trait in Pakistan can affect the manifestation and perception of narcissistic features, which, in most cases, do not lead to the expression of overt grandiosity as in individualistic cultures, and that, consequently, complicates the clinical diagnosis. Despite the implicated role of dopaminergic and serotonergic pathways in the causes of NPD, such as DRD4, 5-HTTLPR, and COMT, no concrete genetic biomarkers have been defined. The emergent data point to the influence of the epigenetic processes, according to which the early-life adversity, trauma, and sociocultural factors regulate the expression of genes without changes in the sequences. It is important to have an insight into how genetic vulnerability and cultural situation relate to help diagnose and intervene appropriately in the treatment of NPD in Pakistan. It may enhance psychosocial outcomes and therapeutic interventions in the framework of culturally sensitive assessment models and biologically informed research.

## INTRODUCTION

Narcissistic Personality Disorder (NPD) is a heterogeneous and complicated psychiatric disorder that is marked by widespread grandiosity, the need for admiration, and poor empathy for others [1]. NPD is a serious problem for both the clinician, researchers, and victims because it is a great challenge to the functioning of the individual in interpersonal relationships, emotional stability, and social behaviours as defined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)(Cluster B personality disorders) [2]. The narcissism concept is a Greek myth where Narcissus is absorbed by his libidinous reflection, meaning that it is a pathological process of self-absorption and self-idealization [3]. In clinical terms, patients with NPD are often characterized by their over-importance and continuous fantasies about unlimited success or power, a feeling of exceptionalism, and a necessity to be validated and adored by others [4]. These external manifestations often conceal some underlying weaknesses of the psyche, such as poor self-esteem, feelings of inadequacy, and the inability to develop a true emotional bond. As much as people with NPD might come out as confident or socially competent at first, long-term interaction usually brings out emotional insecurity, a manipulative relationship style, and relationship problems that make it difficult to engage with them during therapy and maintain relationships with them [5]. The prevalence

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of NPD through epidemiological data, mainly based on population-based surveys and clinical investigations in Western nations, estimates the prevalence to range between 6.2 and 7.7 in males and between 4.8 and 6.2 in females. Twin and family studies, which are also extensively done in Western populations, suggest a strong heritable component with heritability estimates of about 24% in community samples, and up to 77% in clinical samples, with little support for shared environmental effects or sex-specific effects [6]. Despite these results, NPD diagnosis remains largely dependent on the clinical interview and standardized psychometric measures, which are prone to the self-reporting bias and are possibly determined by cultural norms and expectations [7]. Modern etiological theories define NPD as the result of a multifaceted interaction of genetic predisposition and environmental factors. It is believed that genetic vulnerability is a contributory factor to narcissistic personality traits as a subset of the larger heritable personality dimensions [8]. Negative early life experiences, such as childhood neglect, abuse, lack of parental validation, or overpraise, can also disrupt normative self-development and interpersonal functioning in genetically susceptible individuals and lead to a greater expression of narcissism [9]. These characteristics may be further enforced by cultural settings that contribute to the importance of individual success, competition, and social status. Psychiatric genetics, such as genome-wide association studies (GWAS), candidate gene studies, and molecular genetic studies, have found a number of genetic variants that may be linked to narcissism, although none of the results have been confirmed to be definitive genetic biomarkers of NPD [10].

Empirical studies of NPD are not well studied and represented in the literature in Pakistan. Previous research has also mainly concentrated on predicting the extent of prevalence of personality disorders as a general term, and not NPD as such. The lack of diagnostic instruments that have been validated in a specific cultural context, mental health stigma, and lack of access to psychiatric care are significant obstacles to proper diagnosis and treatment. Moreover, the impact of cultural norms that promote collectivism, family respect, and social rank could also affect the expression of the manifestations of narcissism and related interpretations, which can lead to a higher chance of under recognition or misclassification in clinical environments. The article by the author is a narrative review of the literature available on the topic of narcissistic personality disorder with specific emphasis on the etiological, diagnostic, genetic, and sociocultural aspects of the issue in the Pakistani context.

The present article was carried out in the form of a narrative literature review to generalize the available evidence regarding the biological, genetic, diagnostic, and sociocultural aspects of narcissistic personality disorder (NPD), focusing specifically on the findings that could be used in the context of Pakistan and other collectivistic societies. The narrative approach has been chosen to enable the incorporation of divergent study designs and theoretical outlooks that cannot be accommodated in a quantitative meta-analysis. The literature search was conducted in several electronic databases, such as PubMed, Scopus, PsycINFO, and Google Scholar, to cover the comprehensive psychiatric, psychological, genetic, and sociocultural studies. The predefined search keys and phrases were used as China searches were taken, either alone or in combination, such as narcissistic personality disorder, narcissism, genetic factors, epigenetics, neurobiology, diagnosis, cultural factors, South Asia, and Pakistan. There were a set period of publication (20192024) and a clear inclusion/exclusion criterion. Manual screening of reference lists of the relevant articles was also performed to find some more relevant studies. Scholarly articles had to meet the inclusion criteria of being peer-reviewed and focused on at least one of the areas of interest: etiology, genetic or neurobiological correlates, diagnostic models, cultural factors, or psychosocial and functional consequences of NPD. Since there were few literature sources on the specifics of the region, a study carried out outside of Pakistan was incorporated, where the results were conceptually applicable or offered comparative data on collectivistic versus individualistic cultures. Articles that described subclinical narcissism but not personality pathology were not considered. Opinion pieces, abstracts of conferences, and other unpublished material were not taken into consideration. The overall parts of the articles selected and included were done based on their relevance in terms of the themes covered, methodological clarity, and their contribution to conceptual knowledge, and not on quantitative limits. The literature reviewed consisted of different study designs, including cross-sectional surveys, twin and family studies, neuroimaging studies, and organizational or educational population-based studies. The case-based discussions mentioned in this review only mention already published empirical studies and not illustrative or hypothetical cases. The method of data extraction was qualitative and concentrated on the nature of the studies, population context, evaluation practices, and main conclusions. Formal meta-analysis was not done because results were not homogeneous based on study designs, outcome measures, and population. Rather, the synthesis of

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findings was done in a narrative manner and grouped into thematic sections to bring out the convergent evidence, differences in context, and gaps in the literature. This methodological review allows the systematic and integrative coverage of the narcissistic personality disorder, besides considering the drawbacks of heterogeneity of the studies and the lack of large-scale empirical studies conducted in Pakistan.

**Pathophysiology**

Historically, the concept of narcissistic personality disorder (NPD) has been defined as a maladaptive personality characteristic, which is mainly defined by dysfunctional interactions. Nevertheless, during the last decades, the research interest has been more and more focused on the biological and neurobiological processes, which could be involved in the development and support of the disorder. The existing data indicate that the pathophysiology of NPD is multifactorial with a complex interplay between neurobiological changes, genetic susceptibility, and environmental factors. The neuroimaging has given an understanding of the structural and functional brain variation with NPD. Changes have been observed in brain areas that are involved in emotion regulation, social cognition, empathy, as well as self-referent processing [11, 12]. These areas create neural networks that are interrelated and facilitate the ability to be affective and to understand the other person, which often fail in narcissistic pathology. Findings of structural neuroimaging studies, which are mainly carried out in young male clinical samples, reveal that there are declines in white matter microstructural integrity in major neural networks, indicative of impaired connections, which could be the basis of impairment in emotional processing and interpersonal functioning [13]. Besides neurobiological evidence, new models show that gene-environment interactions determine narcissistic traits. Existing environmental stressors, especially in the sensitive developmental stages, might affect the expression of genes via epigenetic processes affecting neurodevelopment, personality formation, and susceptibility to psychopathology. These processes could be the reason behind the fluctuation and wavering of narcissistic personalities in individuals over time. In combination, the evidence available suggests that NPD pathophysiology involves a combination of interacting neurophysiological, hereditary, and environmental factors, as summarized conceptually in figure 1.

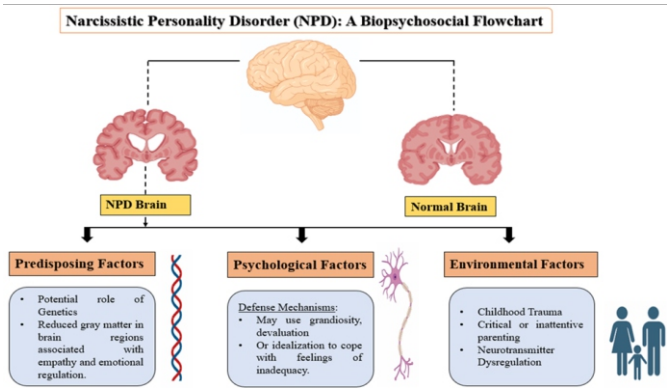


**Figure 1:** Schematic Representation of Biological, Psychological, and Environmental Factors Involved in the Development of Narcissistic Personality Disorder

Although there has been increased knowledge in neuroimaging, molecular genetics, and epigenetics, the biological basis of NPD has not been fully comprehended yet. The majority of the results are correlational, and causal mechanisms have not been well defined. This has resulted in the fact that targeted biological interventions have not been able to be developed and, as a result, there is a need to conduct further integrative and longitudinal studies to help understand the etiological processes that may be involved in such a complex and debilitating disorder.

**Narcissistic Personality Disorder in Pakistan**

The Pakistani society is largely collectivistic and highly emphasizes family pride, status in the society, and interdependence. As an individual, one is usually highly related to the family and the social role, and the social demands tend to favor group unity rather than the self-expression of an individual. In this cultural background, narcissism can manifest itself in different ways compared to individualistic societies. The grandiosity and the desirability of being admired may be formed in terms of any form of success that raises family prestige, but not individual distinction, and in such ways, the practices may be viewed as culturally normal as opposed to psychopathology. This means that narcissistic personality disorder can be misunderstood or misdiagnosed either in clinical or social practice [14]. Pakistan has socially constructed and maintained gender roles. The males are supposed to exhibit authority, dominance, and leadership, which can intersect with narcissistic aspects of entitlement and control, in addition to being socially acceptable instead of pathological [14]. Conversely, the narcissistic qualities in females can be more secretive, and adoration can be gained with the help of a physical appearance, societal status, or even home and family success. Mental health is also socially stigmatized, thus making diagnosis and treatment more difficult, especially for women who may not seek treatment because of the

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possibility of being ostracized by society [15]. Despite the slow increase in mental health awareness in Pakistan, significant infrastructural impediments to accessing mental care continue to exist, such as stigma, lack of resources, and misunderstandings about mental illness [16]. In a family system, narcissistic individuals are usually linked to dysfunctional relationship behaviors such as emotional neglect, interpersonal conflict, manipulation, and emotional detachment. Being often observed by partners and family members, the psychological distress manifests in emotional damage, confusion, and relationship instability that can lead to the disruption of the family over the long run. The emerging, albeit scant, evidence of the social and relational effects of narcissistic traits is presented through the empirical studies carried out in Pakistan. A cross-sectional study carried out in Multan had a negative correlation between narcissistic traits and healthy family functioning, where the levels of narcissism were greater among men than it was among women. The authors proposed that gender differences could be partially supported by culturally supported positions of authority, and women were more negatively impacted in family contacts, which could be because of higher emotional commitments and relational sensitivity [17]. Model 1: Narcissistic tendencies, forgiveness, and empathy predictors of social connectedness among university students and (B) Model 2: The influence of narcissistic personality disorder on cognitive organizational cynicism, mediated by psychological capital in selected hospitals [18, 19], as shown in figure 2.

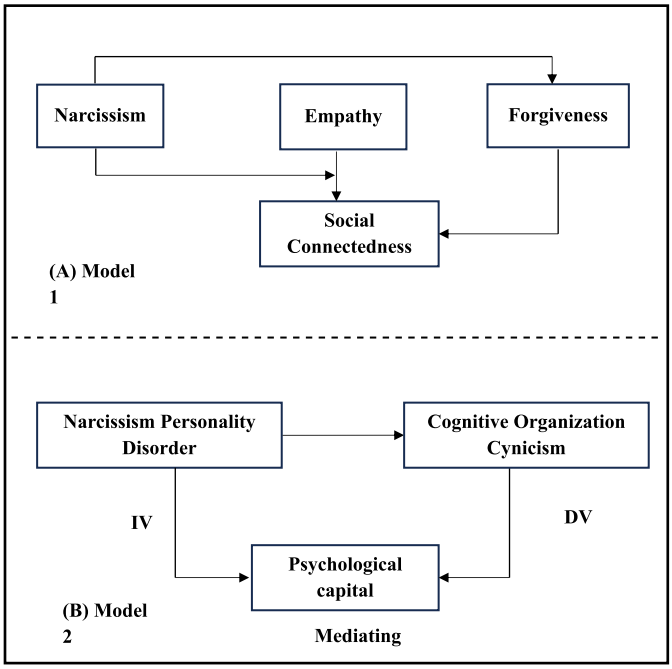


**Figure 2:** Published Empirical Studies from Pakistan

Some published empirical studies that were carried out within academic and occupational settings have also investigated the narcissistic traits among Pakistani populations further. In the study that was conducted on 280 university students of the University of Lahore, descriptive statistics, correlational analyses, moderated regression, and independent sample t-tests were used to analyze the relationships between narcissistic tendencies, empathy, forgiveness, and social cohesion. The results stated that narcissistic personality trait had a negative relationship with social relationships, and empathy and forgiveness had a positive relationship with social connectedness, where gender and family structure acted as moderating variables [18]. The other quantitative research conducted on the relationship between narcissistic traits and organizational cynicism in Pakistani nurses, and the study determined psychological capital (PsyCap) as a mediating variable. The study employed correlational and mediation analyses and revealed a significant correlation between narcissism and organizational cynicism, though with the reduction of PsyCap, which was higher. Cronbach and Kaiser-Meyer-Olkin values were acceptable, and thus indicated that organizational interventions to increase psychological capital can be used in the reduction of maladaptive narcissistic behaviors in a professional context [19, 20]. Other studies have analyzed narcissism in students and employees in terms of aggression, self-esteem, use of social media, and unethical pro-organizational behavior. Research on college and university students has shown positive correlations between narcissism and aggression, and significant gender variations on certain dimensions of narcissism. The studies of the social media usage process have shown that a greater involvement in the use of social media platforms such as Facebook and Instagram could be related to a greater level of narcissism among younger and more educated users, and the sociocultural context, individual personality, and digital surroundings interact to a complex degree [21]. Moderating effect of organizational change on the connection between narcissism and unethical pro-organizational behavior (UPB), and its resultant effect on guilt and shame [22], as shown in figure 3.

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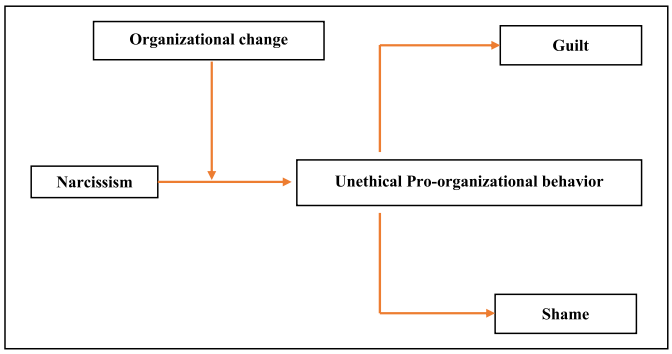


**Figure 3:** The Moderating Effect of Organizational Change Between Narcissism and UPB

Occupational research employing a three-wave design involving 287 employees has further demonstrated that narcissistic traits are associated with unethical pro-organizational behavior, particularly during periods of organizational change. These findings align with trait activation theory, suggesting that situational cues may amplify narcissistic tendencies while attenuating feelings of guilt and shame, thereby increasing the likelihood of unethical actions [22]. Conceptual frameworks derived from selected published studies are illustrated in Figures 2 and 3; these figures represent descriptive schematics based on existing literature and do not depict original empirical data.

**Genetic Underpinnings**

Twin and family studies provide uniform support for a genetic factor in narcissistic personality disorder (NPD). According to a meta-analysis of twin and family-based studies, which were mostly carried out in Western countries, it was determined that the contribution of heredity to the development of narcissistic personality disorders is about 0.51, which is proportional to moderate or significant genetic influence on the condition [23, 24]. These results imply that genetic predisposition is an important factor in the formation of narcissistic character, and environmental factors are also important. Candidates' genes of dopaminergic and serotonergic neurotransmission have been of primary interest in molecular genetic research since it has been proven to play a role in the processing of rewards, affect regulation, and social behavior. It was also reported that narcissistic traits are correlated with polymorphisms in various genes, including SLC6A3 and SLC6A4, including the 5-HTTLPR variant of the serotonin transporter gene [24, 25]. Other reports have put forth the possible associations with other genes like COMT, DRD4, and other serotonergic variants, but again, results have been mixed, and no one genetic marker has been shown to be related definitively with NPD [26]. Altogether, existing data indicate a polygenic and multifactorial genetic architecture in the form of a non-deterministic genetic factor [26].

**Neurobiological Correlates**

The development of neuroimaging, especially functional magnetic resonance imaging (fMRI), has also made a significant contribution to the comprehension of the neurobiological correlates of narcissistic personality disorder. The functional studies always indicate a change in the activity in parts of the brain that are related to reward processing, self-referential thinking, and empathic functioning. To illustrate, those with NPD have exhibited decreased ventral striatum activation when performing social reward or acceptance regarding activities, which indicates a distortion in reward sensitivity in the interpersonal dimensions [27]. Conversely, greater medial prefrontal cortex activation has been found in self-referential or self-enhancing tasks, which are used to indicate an increased focus on self and self-evaluation processing [28]. Neuroimaging and structural neuropathology findings also corroborate these results by showing a loss of gray matter volume in the fronto-paralimbic systems, such as the anterior insula, medial and dorsolateral prefrontal cortices, and the medial cingulate cortex [29]. These are the areas that play a pivotal role in emotional consciousness, empathy, and social cognition. Endogenous changes in the anterior insula, especially, have been linked to the lack of empathic processing, which is one of the key clinical signs of NPD. Though these neurobiological results contribute to the disorder, they can only be considered as correlates and not as causal processes.

**Diagnosis of Narcissistic Personality Disorder**

Narcissistic personality disorder diagnosis depends mainly on a clinical evaluation with the help of standardized diagnostic criteria provided in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). The major diagnostic characteristics are the presence of pervasive grandiosity, the major need for admiration, and lack of empathy, with impaired functional levels or interpersonal distress in the social, occupational, or relational spheres. Even though biological correlates, represented by neuroimaging and genetic findings, have been observed to correlate with the narcissistic characteristics, they are not yet brought into the mainstream of the diagnostic practice [30-32]. Diagnosis is, thus, still based on clinical interviews, behavior observation, and validated psychometrics. Since cultural norms affect the way people express their personality, especially in collectivistic cultures like Pakistan, one should be cautious when it comes to the sociocultural context, as one may be over- or underdiagnosed. Biological results are not to be considered diagnostic measures but

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rather, secondary data, which supports the necessity to adopt culturally sensitive and integrative systems of evaluation, as shown in table 1.

**Table 1:** Potential Treatment Approaches For Narcissistic Personality Disorder

| S. No. | Treatment Approach | Description | Potential Benefits | Limitations | References |
|---|---|---|---|---|---|
| 1 | Psychotherapy | Individual therapy focusing on self-awareness, emotional regulation, and interpersonal skills | Improve self-esteem, relationships, and social functioning | May be a lengthy process, and NPD individuals might be resistant to change | [30] |
| 2 | Schema Therapy | Identifies and modifies maladaptive cognitive patterns | Address core beliefs and emotional needs underlying NPD behaviors | Limited research on effectiveness specifically for NPD | [11] |
| 3 | Family Therapy | Involves family members in the therapeutic process | Improve communication and family dynamics, but requires all parties to be willing to participate | May not be suitable for all families | [23] |
| 4 | Medication | Not a primary treatment, but might be used for co-occurring conditions like depression or anxiety. | Help manage symptoms, but doesn't address the core issues of NPD | Does not target core personality pathology | [31] |

Clinical pathway for narcissistic personality disorder: From DSM-5 diagnostic criteria to multi-modal treatment planning and long-term management, as shown in figure 4.

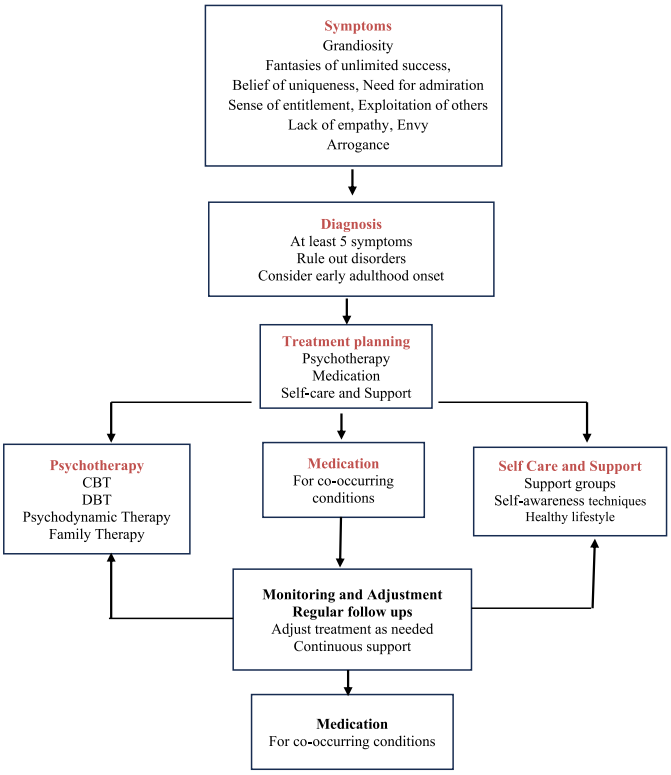


**Figure 4:** Clinical Pathway for Narcissistic Personality Disorder: From DSM-5 Diagnostic Criteria to Multi-Modal Treatment Planning and Long-Term Management

## Role of Genetic Testing

Genetic testing has been suggested as a research-based method to comprehend the complex interrelation between hereditary vulnerability and environmental factors that cause narcissistic personality disorder (NPD). Modern tools, including genome-wide association studies (GWAS), can be used to identify genetic variants that may be related to narcissistic behavior by comparing genomic data of people with the disorder to that of control groups. Such methods have increased our understanding of the polygenic nature of personality traits and associated psychopathology, but the results are preliminary and generalized [33]. Genetic testing is currently not utilized in clinical practice as a diagnostic test in NPD. Since people who have a family history of narcissistic behaviors might be more susceptible, genetic results are not adequate to determine the onset or severity of the disorder. Rather, these data might be added to general risk profiling in their interpretation together with developmental history, psychosocial stressor and clinical examination [34]. Genetic counseling can be helpful as a supportive intervention because genetic risk, which is likely to occur, can be comprehended in a biopsychosocial context instead of being perceived as a deterministic fact. Ethics are still at the forefront in discussing the issue of genetic testing in personality disorders. The matters of privacy, data security, stigmatization, possible discrimination, and the psychological factor of risk disclosure should be considered. Proper management of data and informed consent, as well as careful interpretation of findings, is necessary in order to reduce harm and safeguard autonomy at the individual level. Genetic testing must therefore be seen as a research tool and not a clinical application at the moment. Genetic research could be useful in future progression of NPD research, especially when combined with psychological assessment and neurobiological results; however, at this point, its contribution to everyday diagnosis and treatment planning is limited [35].

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**Future Prospects for NPD Research and Treatment**

Future research on narcissistic personality disorder (NPD) holds substantial potential for advancing both theoretical understanding and clinical practice. Longitudinal study designs are particularly important, as they can clarify developmental trajectories and identify early-life factors that contribute to the emergence and persistence of narcissistic pathology across the lifespan. Such studies may help distinguish transient narcissistic traits from clinically significant disorders. Another critical direction involves the investigation of gene–environment interactions. Examining how genetic susceptibility interacts with childhood experiences, trauma, parenting styles, and sociocultural stressors may enable the development of more targeted and preventive intervention strategies. This approach is especially relevant in culturally diverse settings, where environmental influences may modify genetic risk expression. The identification of reliable biological markers represents an important objective for future research. Advances in neuroimaging techniques and molecular genetics may facilitate earlier identification of individuals at risk and improve prediction of treatment response. In this context, precision medicine and pharmacogenomics offer promising avenues for tailoring therapeutic interventions according to individual biological profiles, potentially enhancing treatment efficacy while minimizing adverse effects. In addition, interventions targeting neuroplasticity may support improvements in emotional regulation, self-awareness, and interpersonal functioning among individuals with NPD. The increasing use of social media platforms also warrants further investigation, as digital environments may reinforce or amplify narcissistic behaviors. Finally, family- and community-based interventions, along with interdisciplinary collaboration across genetics, neuroscience, psychology, and social sciences, are essential for refining diagnostic tools and developing culturally sensitive, person-centered treatment models. Collectively, these strategies may contribute to improved clinical outcomes and enhanced quality of life for individuals affected by NPD and those around them.

**Study Limitations**

This is a narrative review that has a number of limitations. The process of study selection was not systematic, and thus, it can add selection bias. A good deal of the biological and genetic evidence is obtained in Western populations, which restricts the generalizability of culture. The literature on Pakistani research is limited, and most of it evaluates non-clinical samples of narcissistic qualities, instead of diagnosed NPD. The difference in study designs and measurement instruments also limited direct comparison of the results.

## CONCLUSION

The review adopts a multidisciplinary approach to narcissistic personality disorder by integrating genetics, neuroscience, psychology, and social research. It highlights the combined role of genetic and environmental factors, including epigenetic mechanisms, in NPD development. Emphasis is placed on a multimodal diagnostic and treatment framework involving psychological assessment, clinical observation, and emerging technologies such as pharmacogenomics. Despite advancements, key research gaps remain in gene–environment interactions, biomarker identification, long-term outcomes, and ethical considerations of personalized genetic testing.

## Authors' Contribution

Conceptualization: MS
Methodology: MS, ZS, CR, UFL, SZ
Formal analysis: MS, ZS, UFL
Writing and Drafting: MS, ZS, CR, UFL
Review and Editing: MS, ZS, CR, UFL, SZ

All authors approved the final manuscript and take responsibility for the integrity of the work.

## Conflicts of Interest

The authors declare no conflict of interest.

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