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Research Paper

Hierarchical Taxonomy of Psychopathology (HiTOP) Model: A Narrative Review of Theoretical Basis and Psychometric Evidence

Abstract

Introduction and Objective: This narrative review examined the Hierarchical Taxonomy of Psychopathology (HiTOP) with a focus on its theoretical foundations, conceptual framework, and psychometric evidence.

Research Methodology: A narrative review was conducted using Persian and English literature published between ٢٠٠٠ and ٢٠٢٥, identified through searches of major domestic and international databases, including SID, IranDoc, PubMed, Scopus, and Google Scholar. The search was conducted in June ٢٠٢٦ using combinations of keywords related to HiTOP, psychopathology classification, validity, and reliability. Following screening and eligibility assessment, ١٥ articles were included and synthesized across two domains: the theoretical and conceptual foundations of HiTOP and its psychometric evidence.

Findings: The findings were divided into two main categories. Theoretical and conceptual findings indicated that HiTOP conceptualizes psychopathology as a dimensional and hierarchical structure extending from symptoms and maladaptive traits to syndromes, spectra, superspectra, and the general psychopathology factor. Psychometric findings provided empirical support for the validity and hierarchical organization of several HiTOP dimensions, including evidence for construct, convergent, discriminant, and criterion-related validity. However, the strength and consistency of psychometric evidence varied across spectra, samples, and validation approaches, with some studies identifying limitations in the construct and criterion-related validity of specific dimensions.

Conclusion: Overall, the findings support HiTOP as a comprehensive dimensional and hierarchical framework for conceptualizing psychopathology, while indicating the need for further psychometric validation across diverse populations, spectra, and assessment methods.

Keywords:

HITOP Model, Narrative Review

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Citation:

Introduction

The classification of mental disorders has long been one of the fundamental challenges in psychiatry and clinical psychology. For more than half a century, the classification of mental disorders has been based predominantly on traditional diagnostic systems, particularly the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) and the *International Classification of Diseases* (ICD). These systems are largely grounded in a categorical approach and expert consensus, defining mental disorders as distinct diagnostic categories (Rief et al., ۲۰۲۳). Despite their widespread use, research evidence has identified several limitations of this approach, including discrepancies between diagnostic boundaries and the continuum of psychological symptoms, comorbidity and diagnostic overlap, within-diagnosis heterogeneity, and variability in the manifestation of symptoms over time (Kotov et al., ۲۰۱۷). These limitations have led to increasing interest in models that conceptualize psychopathology dimensionally and hierarchically (Rief et al., ۲۰۲۳).

Evidence from behavioral genetic and genomic studies has also supported the existence of shared vulnerabilities across mental disorders. Behavioral genetic studies have shown that different disorders, particularly those within the internalizing and externalizing domains, are partly influenced by common genetic factors, which may help explain comorbidity and overlap among disorders (Krueger & Markon, ۲۰۰٦; Krueger, ۲۰۲٤). Similarly, genomic studies have demonstrated that some genetic factors contribute to the development of multiple mental disorders, providing support for substantial overlap in their genetic architecture (Cross-Disorder Group of the Psychiatric Genomics Consortium, ۲۰۱۳; PGC[۱]. ۲۰۱۹). These findings are consistent with the concept of shared vulnerability and the general psychopathology factor (p factor) (Kotov et al., ۲۰۱۷). Nevertheless, the organization of psychopathology cannot be explained solely in terms of genetic factors, as psychological factors also contribute to the development and maintenance of shared patterns across mental disorders.

One important psychological issue in this context is the role of transdiagnostic constructs**.** According to Barlow's (۲۰۲۰) transdiagnostic model**,** negative affect is associated with disorders such as generalized anxiety disorder, depression, and panic attacks. In addition, low positive affect is associated with depression and social phobia, while worry may function as a transdiagnostic process in panic and agoraphobia symptoms (Watson & Clark, ۲۰۲۰). At a broader level, Lahey et al. (۲۰۰۸) demonstrated that the factors of distress, fears, and externalizing are also correlated with one another and may be conceptualized as a broader, higher-order transdiagnostic construct of psychopathology, reflecting features shared across these dimensions. These findings indicate that transdiagnostic constructs not only account for common features across multiple disorders but also contribute to distinguishing among different dimensions of psychopathology. Taken together, these findings, along with the limitations of traditional diagnostic systems, highlight the need for alternative approaches to the classification of mental disorders, one of which is the Hierarchical Taxonomy of Psychopathology (HiTOP)**.**

The *Hierarchical Taxonomy of Psychopathology* is a quantitative, data-driven framework developed to provide a hierarchical and dimensional approach to the classification of mental disorders. In contrast to traditional categorical systems, this framework conceptualizes psychopathology as a continuum of symptom dimensions rather than as a set of distinct diagnostic categories. This perspective improves the representation of symptom heterogeneity, reduces the impact of artificial diagnostic boundaries, and provides a more precise framework for understanding comorbidity among mental disorders (Kotov et al., ۲۰۱۷). This approach was developed throughout the ۲۰۱۰s and was formally introduced in ۲۰۱۷ (Krueger, ۲۰۲٤). Its organization consists of five hierarchical levels, beginning with the broad spectrum or general factor of psychopathology and proceeding through major spectra, subspectra, syndromes, and, at the most specific level, symptoms and maladaptive traits (Figure ۱). This organization enables clinicians to assess an individual's overall level of psychopathology and, when necessary, examine more specific dimensions and characteristics within each spectrum; consequently, it facilitates a more comprehensive case formulation and the assessment of conditions characterized by high comorbidity (Barlow et al., ۲۰۱۷).

Despite the theoretical and structural features of this approach, evaluating its position in the classification of psychopathology requires an examination of its empirical and psychometric foundation. The empirical evidence needs to establish whether its dimensions and hierarchical structure demonstrate adequate construct, criterion, convergent, and discriminant validity, and the extent to which they can validly account for the underlying structure and clinical distinctions of psychopathology. In Iran, the literature on this approach remains limited. For example, Komasi et al. (۲۰۲۳) examined the hierarchical taxonomy of psychopathology with an emphasis on biopsychosocial models in explaining somatic symptom disorders. Nevertheless, an integrated examination of the psychometric evidence for this approach remains limited in the Iranian literature. Given this research gap, the present narrative review was conducted to introduce the theoretical principles and conceptual framework of HiTOP and to examine and integrate the available structural and psychometric evidence.

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[۱] Psychiatric Genomics Consortium

Methodology

Given the growing importance of the HiTOP framework in international research and the limited number of domestic studies on this topic, a narrative review approach was adopted. A comprehensive literature search was conducted across domestic databases, including the Scientific Information Database of Islamic Jihad (SID), the Comprehensive Portal of Humanities, and IranDoc, as well as international databases, including PubMed, Scopus, Springer, ScienceDirect, and Google Scholar. The search strategy was developed using the following keywords and their combinations: *Hierarchical Taxonomy of Psychopathology (HiTOP), Psychopathology Classification, Validity* and *Reliability.* The keywords were combined using the Boolean operators AND and OR. The search covered studies published between ۲۰۰۰ and ۲۰۲۵ CE (۱۳۸۰ –۱٤۰۵ SH). Only articles published in Persian or English were considered. The final search was conducted in June ۲۰۲٦. Studies were included if they met the following criteria: (۱) publication in Persian or English within the specified time period; (۲) availability of the full text; and (۳) direct relevance to the HiTOP framework, including its theoretical foundations, classification structure, or psychometric evidence.Studies were excluded if they were: (۱) duplicate records identified across databases; (۲) unrelated to the HiTOP framework or psychopathology classification; (۳) unavailable in full text; (٤) conference abstracts, editorials, or non-peer-reviewed materials; or (۵) characterized by substantial methodological limitations that compromised the interpretation of findings.

The findings were analyzed and organized into two sections in accordance with the objectives of the present study. The first section addressed the theoretical foundations and conceptual framework of HiTOP, focusing on its core concepts, theoretical principles, hierarchical organization, and major dimensions, whereas the second focused on psychometric evidence, examining empirical findings on its psychometric properties and the validity of its dimensions and hierarchical structure. The initial search yielded ٤۰ records. After removing nine duplicates, ۳۱ unique records remained for screening. Following title and abstract screening, ۱٦ records were excluded because they did not meet the inclusion criteria or their full texts were unavailable. During the final assessment, one study was identified as having been published both as a thesis and as a scientific article; therefore, to avoid double-counting, only the published article was retained. Consequently, ۱۵ articles were included in the final review and organized according to the two primary objectives of the study, as presented in Tables ۲ and ۳. For quality appraisal, the included studies were independently assessed by two researchers who were blinded to each other's evaluations. The assessment considered two criteria: (۱) the extent to which each study addressed the objectives and scope of the present review, and (۲) the scientific credibility of the journal in which the study was published. No substantial discrepancies were identified between the two assessments. The only minor disagreement concerned the inclusion of one conference paper, which was ultimately excluded based on the authors' decision.

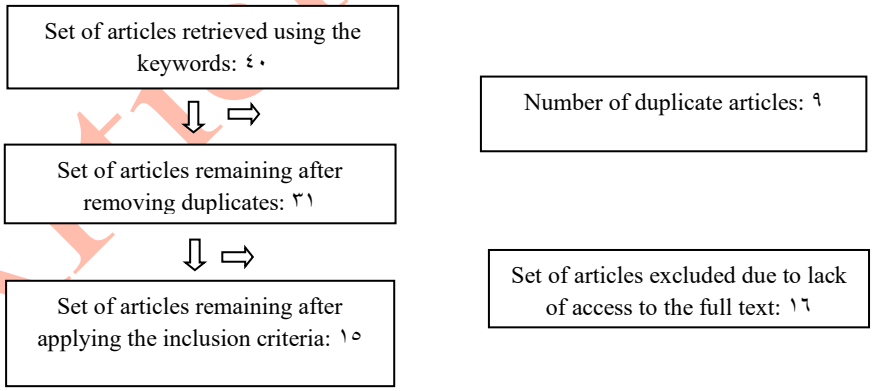


Chart۱: Eligibility Assessment and Retrieval of Qualifying Articles

Results

In accordance with the objectives of the present study, the findings were organized into two main sections. The first section examines the development, evolution, and theoretical foundations of the HiTOP model**,** including the historical and conceptual developments that contributed to its emergence, as well as its underlying theoretical principles and hierarchical organization. The second section presents the empirical evidence for HiTOP, which is organized into two domains: Structural Evidence and Psychometric Evidence. Structural evidence focuses on the empirical support for the model's hierarchical and dimensional organization, whereas psychometric evidence examines its psychometric properties and evidence for its validity.

The Developmental Construction of the HiTOP Model

The development of this model began in ۲۰۰۵ with Krueger's article, "Continuity of Axes I and II in Personality, Personality Disorders, and Clinical Disorders." This paper demonstrated that, based on research in personality psychology and psychopathology, personality disorders and other psychological disorders are more related to each other than distinct, based on six shared characteristics—stability, age of onset, treatment response, insight, comorbidity, and etiology.

Krueger (۲۰۰۵) showed that the latent symptoms in personality disorders and other clinical disorders were stable, and short-term changes in symptom severity did not alter the overall nature of the disorder. Individuals' rankings relative to each other were maintained, and the association between symptom severity over time remained strong, meaning that each person essentially stayed at the same "level" of their symptoms over time. Furthermore, he indicated that mood disorders typically improved with treatment, but relapse was common; anxiety disorders were harder to treat and more persistent; and personality disorders fell somewhere between these two.

The emphasis in the revised fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) on diagnosing personality disorder before the age of ۱۸ has led to certain individuals with antisocial personality disorder being overlooked and has made research on the development of antisocial behavior throughout the lifespan difficult. Furthermore, the notion that personality disorders always begin earlier and clinical disorders later is not consistent with epidemiological evidence, as both types of disorders are more common in youth and their prevalence decreases with age. In reality, clinical disorders and personality disorders co-occur during the pre-adult period and cannot be distinguished solely based on age of onset. The response to treatment for clinical disorders and personality disorders is similar, with both groups responding to psychotherapy and pharmacotherapy. The presence of comorbidity between clinical disorders and personality disorders usually does not reduce treatment effectiveness, and interventions, particularly pharmacological ones, often affect underlying psychiatric processes (Krueger, ۲۰۰۵).

Personality disorders are typically assumed to be associated with low insight; however, evidence suggests that insight varies among individuals with personality disorders, and some individuals are aware of their problems. This implies that insight is a separate dimension that can explain why some individuals with severe personality traits experience social and occupational difficulties, while others do not. Therefore, insight plays a significant role in the distinction between severe personality traits and personality disorders (Watson & Clark, ۲۰۲۰).

Additionally, Krueger (۲۰۰۵) stated that, based on the concept of odds ratio, the comorbidity between personality disorders and clinical disorders is not coincidental, and these disorders share many common symptoms. Although it should be noted that high comorbidity in clinical samples may be artificially reported as high due to Berkson's bias principle, as individuals with more than one disorder are more likely to seek treatment. Ultimately, high comorbidity indicates that clinical disorders and personality disorders may represent the same underlying construct at different levels of severity. Therefore, research should focus on models explaining continuity and common underlying factors between these disorders, rather than on minute distinctions, to provide a more integrated understanding of the classification of mental disorders. In terms of etiology, clinical disorders and personality disorders may be distinguished based on biological causes, but evidence suggests this distinction is not simple. It was previously assumed that clinical disorders had a stronger genetic basis and thus responded better to pharmacotherapy, while personality disorders were more influenced by environmental factors and responded to psychotherapy (Krueger & Markon, ۲۰۰۶). Studies (Jang et al., ۱۹۹۶) indicate that personality disorders in twins, like other mental disorders, are significantly heritable, with greater genetic similarity between identical twins compared to fraternal twins, confirming the importance of genetic factors in the development of abnormal personality traits. A review of ۱۸ personality disorder traits by Livesley et al. (۱۹۹۸) identified four broad genetic factors—emotional dysregulation, antisociality, inhibition, and conscientiousness—which correspond to the four dimensions of the Five-Factor Model of personality (Neuroticism, Agreeableness, Introversion, and Conscientiousness). However, these broad genetic factors do not explain all the observed genetic variation in traits, suggesting that a combination of genetic and environmental factors is necessary for a complete understanding of the causes of personality disorders. Furthermore, newer behavioral genetics approaches consider gene-environment interactions rather than simple aggregate models, where the environment can moderate the effects of genes. Therefore, personality disorders are neither solely environmental nor solely genetic but are the result of a complex interaction between genetic and environmental factors, and future research should integrate these two dimensions to better understand the causes of these disorders.

Finally, inspired by the research of Achenbach & Edelbrock (۱۹۸۳), Krueger (۲۰۰۵) re-examined personality disorders and clinical disorders within the framework of healthy personality dimensions. He organized psychological disorders along two spectra: introversion and extraversion. Mood and anxiety disorders were linked to neuroticism/negative emotionality, while substance use disorders and antisocial behavior were associated with negative emotionality and disinhibition. These spectra are genetically coherent, and at the same time, specific environmental and genetic factors explain the differences between related disorders. Data indicate that the introverted spectrum disorders are associated with negative personality traits (neuroticism), and the extraverted

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spectrum disorders, in addition to negative emotionality, are linked to features of disinhibition and moral instability (lack of conscientiousness and non-conformity). Psychologically, negative emotionality increases the risk of introverted disorders, and the combination of negative emotionality and disinhibition increases the risk of extraverted disorders. Behavioral genetics research also suggests that these associations are not only at the phenotypic level but also that genetic and etiological links exist between personality and psychopathology (Krueger & Markon, ۲۰۰۶). Furthermore they through a meta-analysis of ۲۳،۰۰۰ adults, proposed a three-factor model including 'externalizing,' 'distress,' and 'fear,' which Lahey et al. (۲۰۱۲) also found to be interrelated at higher levels in children, adolescents, and adults."

Furthermore, Krueger demonstrated through behavioral genetics studies that the etiology of mental disorders shares the same organizational structure as his model; in other words, the introverted and extraverted spectra are observed not only in the phenotypic pattern of mental disorders but also in their genetic factors (Krueger et al., ۲۰۰۷). The study by Kendler et al. (۲۰۰۳) on twins also showed that the genetic patterns of psychopathology follow the same hierarchical structure as the phenotype (introverted and extraverted spectra). Specifically, comorbidity of disorders in identical twins was predominantly within-spectrum; that is, the presence of an introverted disorder in one twin increased the likelihood of the other twin having another disorder within the same introverted spectrum, not extraverted disorders. This pattern was also observed for extraverted disorders.

In their ۲۰۰۸ paper, *Personality Heritability Isn't Always 50%: Gene–Environment Interactions and Correlations Between Personality and Parenting Styles*, South & Krueger (۲۰۰۸) demonstrated that the contributions of genetic and environmental factors to personality development are not fixed but can vary depending on environmental conditions. Their findings indicated that the quality of adolescent–parent relationships can either amplify or attenuate the effects of genetic factors and environmental influences on personality. Specifically, under conditions of high tension or conflict with parents, the influence of genetic factors on negative emotionality decreased, while the contribution of the shared family environment increased. Under these circumstances, negative emotionality was influenced almost equally by genetic and shared environmental factors. Conversely, when adolescents experienced high levels of parental respect and attention, the influence of genetic factors on positive personality traits, such as positive emotionality, increased. At lower levels of parental respect, genetic influences decreased, while the contribution of the non-shared environment (i.e., environmental experiences that differ between twins) became more pronounced. These findings suggest that personality develops through a dynamic interplay between genetic and environmental influences, which cannot be fully captured by traditional estimates of heritability alone. This perspective extends the traditional interpretation of ACE models and Turkheimer's (۲۰۰۰) three laws of behavior genetics, which describe general population-level patterns indicating that individual differences in personality are substantially influenced by genetic factors, shared environmental influences tend to be relatively small, and non-shared environmental experiences contribute significantly to individual differences. Subsequent research has demonstrated that, although Turkheimer's framework remains broadly valid, the relative contributions of genetic and environmental factors can vary depending on environmental conditions, particularly the quality of parent–child relationships. Therefore, gene–environment interaction models are essential for developing a more comprehensive understanding of personality development (South & Krueger, ۲۰۰۸).

The HiTOP Model

Krueger et al. first proposed the Hierarchical Taxonomy of Psychopathology (HiTOP) model in ۲۰۱۶ through a systematic review of the research literature. In the initial classification, the primary focus was on psychological disorders, with only a brief review of personality disorders. The main version was ultimately published in ۲۰۱۷ (Table ۱). Unlike the Diagnostic and Statistical Manual of Mental Disorders (DSM), this model does not merely describe disorders but is etiological in nature. This hierarchical structure begins with symptoms and progresses to broader domains based on the correlations between symptoms. The main hypothesis of this model is that phenotypic dimensions with shared causes are correlated, and these shared causes form the basis of an etiological classification. Factors in this model are divided into three types: general, and specific. The general factor influences all dimensions (Kotov et al., ۲۰۲۱).

The factor affects only a specific domain, and the specific factor influences each first-order dimension. In this model, genetic and (shared) familial environmental factors act non-specifically, increasing the risk of most dimensions of psychopathology through the general factor and higher levels of the hierarchy. In contrast, non-shared environmental factors are more specific; they may affect several dimensions, but their primary role is in differentiating and distinguishing the first-order dimensions of psychopathology from each other. Some shared and/or dimension-specific causal effects on each first-order dimension of psychopathology are stable, relatively invariant, or have enduring effects, leading to morphogenic stability over time. Conversely, genetic and environmental factors can have time-varying effects, causing heteromorphic transitions in psychopathology (Kotov et al., ۲۰۲۰).

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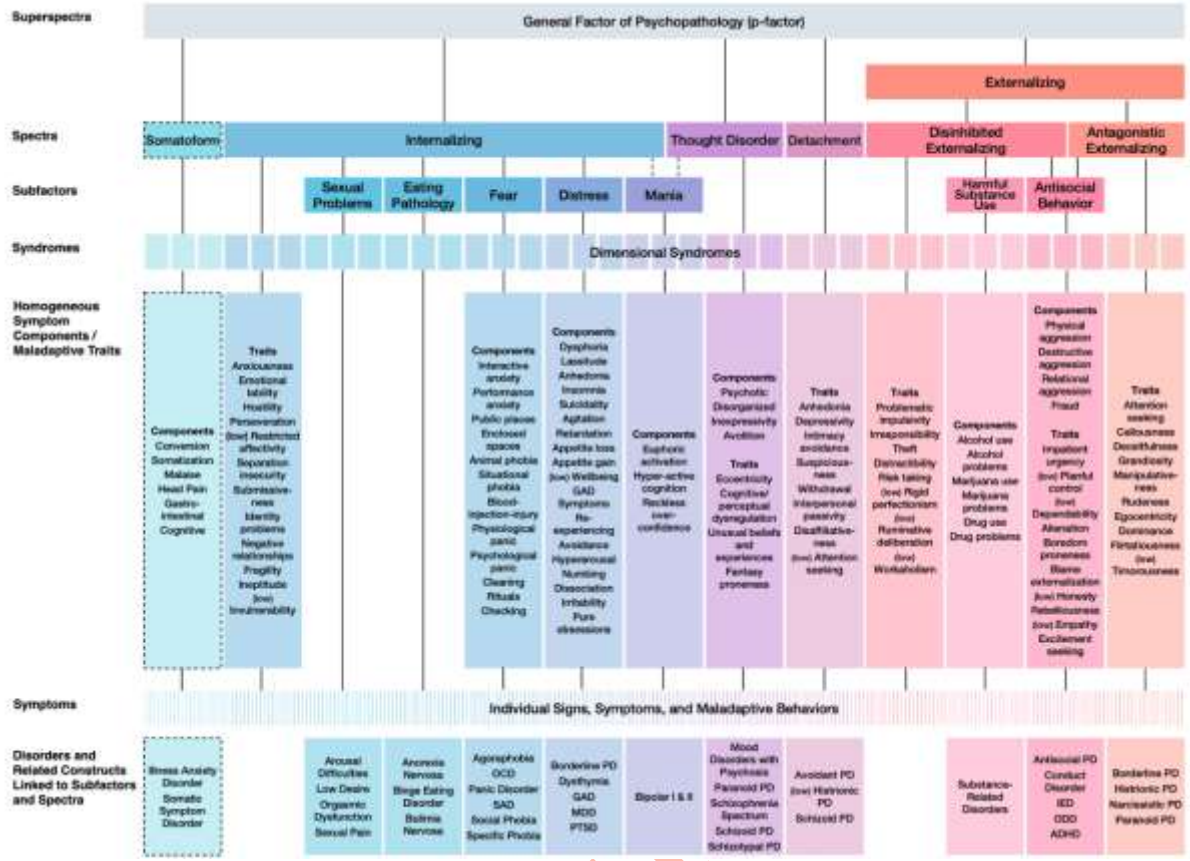


Figure ١: Hierarchical Taxonomy of Psychopathology (HiTOP) Model

Reprinted from Kotov et al. (2017).

P Factor

The general factor represents an individual's overall vulnerability to mental disorders and is recognized as an integrated index for the overlap and severity of psychological problems. This factor is a pervasive construct that accounts for a significant portion of the correlations among dimensions and higher-order factors of psychopathology. It is worth noting that these correlations do not stem from imprecise diagnoses, although the role of the general factor is not identical across all domains (Kotov et al., ٢٠١٧). Based on the common factor or hierarchical model, many mental disorders are influenced by a set of shared causes; this means that genes or environmental factors can increase the risk of developing multiple disorders simultaneously. This explains the high prevalence of comorbidity among different disorders. In some domains, such as the distress domain, part of the correlations may stem from shared symptoms, which the general factor encompasses. In contrast, in domains such as fears or externalizing disorders, few shared symptoms are observed; nevertheless, these dimensions also load onto the general factor. Therefore, in these cases, the general factor operates beyond mere symptom overlap and represents a cross-disorder general predisposition or vulnerability (Kotov et al., ٢٠١٨). Confirmation of these assumptions can be observed in the high prevalence of severe disorders, such as mania and autism, in individuals who score high on the general psychopathology factor, even when the general factor is extracted solely based on the correlations of common disorders and does not include these severe disorders. This finding indicates that the causal factors of mania and autism overlap significantly with the common factors that, through the general factor, increase the risk of developing most common dimensions of psychopathology (De Young & Krueger, ٢٠١٨).

Sub-Spectra More precise factor analyses have indicated that each spectrum in this model includes specific sub-spectra. Within the internalizing spectrum, at least two sub-spectra have been consistently identified; the distress sub-spectrum includes major depressive disorder, dysthymic disorder, generalized anxiety disorder, and post-traumatic stress disorder, and the fear sub-spectrum includes panic disorder, phobic disorders, obsessive-compulsive disorder, and separation anxiety disorder. A third sub-spectrum comprised eating disorders, including

anorexia and bulimia nervosa. A fourth sub-spectrum included sexual problems, encompassing difficulties with sexual desire, arousal, orgasm, and sexual pain. Some disorders, such as panic disorder, simultaneously exhibit characteristics of both the fear and distress clusters, involving both sub-spectra. Additionally, obsessive-compulsive disorder is a relatively weak member of the fear sub-spectrum and shows some overlap with the thought disorder spectrum. The fear and distress clusters often correlate highly with each other, and some studies have been unable to model them separately (Kotov et al., ٢٠١٧).

The externalizing spectrum encompassed two sub-spectra: disinhibition and antagonism; the antisocial behavior dimension included oppositional defiant disorder, attention-deficit/hyperactivity disorder, and sometimes conduct disorder, while the substance use dimension included problems with alcohol and illicit drugs. The antisocial behavior dimension is a combination of lack of inhibition and antagonism, relating to both spectra, whereas the substance use dimension is more associated with a lack of inhibition. Less information is available for other spectra (thought disorder, detachment, and somatoform), and it is not yet clear how their sub-spectra are organized. As research progresses, it is expected that more sub-spectra will be identified, explaining the intermediate hierarchical level between individual disorders and the spectra (Forbes et al., ٢٠٢٤). There is also evidence suggesting that mania and bipolar disorder are related to the internalizing spectrum, but mania also correlates with the thought disorder spectrum; therefore, it is unclear whether the mania sub-spectrum fully belongs to the internalizing spectrum or thought disorder, or is a combination of both (Kotov et al., ٢٠٢١).

Spectra

The spectra refer to groupings of related mental disorders. These disorders show high comorbidity and are indicative of a shared psychological factor. Large-scale factor-analytic studies have identified five primary spectra: somatoform, internalizing, thought disorder, detachment, and externalizing (specifically, disinhibited/externalizing and antagonistic forms). Each spectrum contains more specific subdimensions and symptom components, allowing assessment to proceed continuously and hierarchically, from broad levels down to more detailed levels. ١. First: Internalizing This spectrum includes depressive disorders, anxiety disorders, post-traumatic stress disorder (PTSD), eating disorders, obsessive-compulsive disorder (OCD), and sexual disorders. It was first identified in children's samples (Achenbach & Rescorla, ٢٠٠١) and then observed in adults as well (Blanco et al., ٢٠١٥; Lahey et al., ٢٠٠٨). ٢. Second: Externalizing This spectrum includes substance use disorders, conduct disorder, oppositional defiant disorder, antisocial behavior, intermittent explosive disorder, and attention-deficit/hyperactivity disorder (ADHD). It has been confirmed in both children and adults (Krueger & Markon, ٢٠٠٦). ٣. Third: Thought Disorder This spectrum includes psychotic disorders, Cluster A personality disorders, and bipolar I disorder. Importantly, this spectrum is independent of the internalizing and externalizing spectra, and it has been repeatedly supported in both adolescents and adults (kotov et al., ٢٠٢١). ٤. Fourth: Somatoform This spectrum is related to experiencing physical symptoms without an adequate medical explanation. Early evidence for this spectrum was reported by McNulty and Overstreet (٢٠١٤). These spectra have been observed in both community and clinical samples (kotov et al., ٢٠١٧). ٥. Fifth: Detachment This spectrum includes avoidant, schizoid, and schizotypal personality disorders (Forbes et al., ٢٠٢٤).

Syndrome Spectra

In the hierarchical model of psychopathology, the syndrome level refers to relatively stable and correlated patterns of symptoms that are dimensional in nature and conceptualized without clear diagnostic boundaries. These syndromes are organized into main spectra, forming the intermediate structure between individual symptoms and the broad spectra of psychopathology. Accordingly, the main internalizing spectrum symptoms include syndromes associated with the distress and fear sub-spectra, as well as internalizing-related traits. Furthermore, syndromes and traits related to the thought disorder spectrum, the disinhibited externalizing spectrum, and the antagonistic externalizing spectrum, along with detachment spectrum traits, somatoform syndromes, and syndromes and traits related to antisocial behavior, are conceptualized cohesively within this model (Kotov et al., ٢٠٢٠).

Homogeneous Symptoms Components and Maladaptive Traits

specifically, the main internalizing spectrum includes symptoms related to the distress and fear sub-spectra and traits pertaining to the internalizing spectrum itself. The main thought disorder spectrum includes related symptoms and traits, the main disinhibited externalizing spectrum includes symptoms and traits, the main

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antagonistic externalizing spectrum and the main detachment spectrum include only traits, the somatoform spectrum includes symptoms, and the antisocial behavior spectrum includes related symptoms and traits (Kotov et al., ۲۰۱۷).

Empirical Evidence for HiTOP

Based on the aim of the study, the empirical evidence concerning the HiTOP model was examined and organized into two main domains. First, structural evidence was examined using structural analysis. In this domain, findings concerning the factor structure, hierarchical organization, general psychopathology factor (p factor), relationships among different levels of the model, and replicability of the HiTOP structure were extracted, compared, and synthesized. Second, psychometric evidence was examined using content analysis. This domain focused on evidence regarding the psychometric properties of HiTOP constructs and dimensions, including construct validity, convergent validity, discriminant validity, criterion-related validity, predictive validity, reliability, and other relevant psychometric indicators, which were extracted, categorized, and synthesized.

Structural Evidence

The studies examining the structural evidence for the HiTOP model were extracted and classified according to the type of structural evidence provided, characteristics and analytical methods employed, the specific structural component of HiTOP investigated, and the main findings. These characteristics are summarized in Table ۲.

Table ۲. Summary of Structural Evidence Supporting the HiTOP Model

Study	Year	Sample	Method	Structural Aspect	Main Finding
Lahey et al.	۲۰۰٤	Children/adolescents	Factor analysis	Structure of psychopathology	Evidence for broad dimensions underlying specific forms of psychopathology
Lahey et al.	۲۰۰۸	Children/adolescents	Structural modeling	Alternative structural models of DSM-IV symptoms	Examination of competing models of psychopathology structure
Lahey et al.	۲۰۱۲	Adults	Factor analysis	General psychopathology factor	Evidence for a broad general factor accounting for covariance across common forms of psychopathology
Lahey et al.	۲۰۱۷	Across the life span	Hierarchical modeling	Hierarchical organization	Evidence supporting a hierarchical organization of psychopathology across developmental stages
Kotov et al.	۲۰۱۷	Multiple empirical studies	Integrative factor-analytic evidence	HiTOP hierarchy	Proposed an empirically based hierarchical organization from symptoms to the general psychopathology factor
Woodling et al.	۲۰۲۲	Chronic low-back-pain patients	Structural model comparison	Placement of Somatoform spectrum	Somatoform psychopathology was better represented as a distinct spectrum rather than as a subfactor of Internalizing
Ringwald et al.	۲۰۲۳	Multiple studies	Meta-analysis	Overall HiTOP structure	Quantitative synthesis of structural evidence supporting several components of the HiTOP hierarchy
Levin-Aspenson & Zimmerman	۲۰۲۳	Clinical sample	Hierarchical/factor modeling	Hierarchical structure	Examined the applicability and structural validity of HiTOP in a clinical sample
Wendt et al.	۲۰۲۳	Community sample	Factor modeling	p factor and spectra p factor and spectra	Psychopathology scales could be mapped onto higher-order HiTOP dimensions, including a general factor and broad spectra
Ringwald et al.	۲۰۲۵	Multiple studies	Meta-analysis	Cognitive functions within HiTOP	Examined how cognitive functioning can be incorporated into the hierarchical structure of HiTOP

Overall, the structural evidence summarized in Table ۲ provides converging support for a dimensional and hierarchical organization of psychopathology, although the strength and scope of evidence vary across studies. Early factor-analytic studies demonstrated that symptoms and syndromes do not consistently conform to the boundaries of traditional diagnostic categories and can be organized into broader, correlated dimensions (Lahey et

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al., ٢٠٠٤, ٢٠٠٨). The evidence from childhood and adolescence was particularly important in demonstrating that psychopathology can be organized at multiple levels of abstraction. Lahey et al. (٢٠٠٤) identified broad dimensions that cut across conventional diagnostic boundaries, while Lahey et al. (٢٠٠٨) demonstrated that narrower dimensions could be organized within broader internalizing and externalizing domains. The latter study also showed substantial correlations among several dimensions, suggesting that psychopathology is not adequately represented by a set of statistically independent syndromes. Evidence from adult psychopathology further extended this hierarchical organization by demonstrating the presence of a general psychopathology factor. Lahey et al. (٢٠١٢) found that prevalent mental disorders could be represented by more specific dimensions, including externalizing, distress, and fears, while these dimensions also shared substantial covariance that could be represented by a general factor. This finding is particularly relevant to HiTOP because the model places the general psychopathology factor at the highest level of its hierarchy. However, the general factor should not be interpreted as replacing the more specific dimensions; rather, the findings support a hierarchical structure in which broad and narrow dimensions capture different levels of shared psychopathological variance.

The development of the formal HiTOP framework represented an integration of these accumulating structural findings. Lahey et al. (٢٠١٧) synthesized evidence from multivariate research across the life span and proposed a hierarchical causal taxonomy in which correlations among narrower dimensions give rise to broader dimensions and, ultimately, a general factor. Similarly, Kotov et al. (٢٠١٧) integrated empirical findings from factor-analytic research into the initial HiTOP model, specifying a hierarchy that extends from individual symptoms and maladaptive traits through syndromes, subfactors, spectra, superspectra, and the general psychopathology factor. Because these publications primarily represent integrative and theoretical syntheses rather than independent empirical tests based on a single sample, they provide conceptual consolidation of the structural evidence rather than additional sample-specific validation. Subsequent empirical studies have examined whether particular components of the HiTOP hierarchy are supported when alternative structural models are directly compared. Woodling et al. (٢٠٢٢), for example, examined the placement of Somatoform psychopathology and found that representing Somatoform as a distinct spectrum provided better structural fit than modeling it as a subfactor of Internalizing. Similarly, Levin-Aspenson and Zimmerman (٢٠٢٣) examined the hierarchical organization of psychopathology in a clinical sample, extending the evaluation of HiTOP-related structural models beyond community-based samples. Further evidence has been obtained by examining whether established psychopathology measures correspond to the higher-order dimensions proposed by HiTOP. Wendt et al. (٢٠٢٣) analyzed ٩٢ psychopathology scales from ٢١ questionnaires in a sample of ٩٠٩ participants using a bifactor-(S-١) approach. The findings showed that established measures could be mapped onto higher-order HiTOP dimensions, including a general psychopathology factor and broad spectra, while some measures showed associations with more than one higher-order dimension, highlighting the empirical interconnectedness of psychopathological constructs and the importance of considering both general and specific sources of variance.

At the meta-analytic level, Ringwald et al. (٢٠٢٣) synthesized structural evidence from ٣٥ studies involving ٢٣ DSM diagnoses and ١٢٠,٥٩٦ participants. By quantitatively integrating findings across independent samples, this study provided a broader empirical assessment of the structural relationships among common forms of psychopathology and strengthened the empirical basis for evaluating a dimensional and hierarchical organization beyond the results of individual factor-analytic investigations. More recent structural work has also considered whether the scope of the HiTO
P hierarchy should be extended beyond conventional symptom-based measures. Ringwald et al. (٢٠٢٥) examined the relationship between cognitive functions and the HiTOP framework through a meta-analytic approach. This line of research is relevant to the structural development of HiTOP because cognitive abilities have generally been less integrated into the factor-analytic literature on which the existing hierarchy was based. Rather than constituting a direct replication of the established HiTOP structure, this evidence addresses the potential expansion and refinement of the taxonomy. Taken together, the structural evidence indicates that psychopathology is characterized by correlated dimensions that can be organized hierarchically across multiple levels of abstraction. Evidence from factor-analytic studies, direct model comparisons, clinical and community samples, and meta-analytic syntheses converges on the presence of broader dimensions underlying narrower psychopathological constructs and on substantial covariance across domains that can be represented by a general psychopathology factor. At the same time, the evidence does not imply that every component or placement within the current HiTOP hierarchy has been definitively established. Studies examining Somatoform psychopathology, cognitive functions, and the mapping of existing measures indicate that specific structural relationships remain subject to empirical testing and refinement. Thus, the current evidence provides substantial support for the general hierarchical architecture of HiTOP while leaving room for further modification of particular dimensions and their placement within the taxonomy.

Overall, the structural evidence reviewed in this section supports the central premise of HiTOP that psychopathology is better represented as a dimensional and hierarchical system than as a collection of discrete and independent diagnostic categories. Across different populations, methodological approaches, and levels of analysis, the findings consistently indicate meaningful associations among specific symptoms and syndromes,

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broader psychopathological dimensions, and a general factor of psychopathology. At the same time, the evidence suggests that the HiTOP hierarchy should be regarded as an empirically informed and evolving framework rather than a fixed structure, because the precise organization and placement of some dimensions remain open to further empirical investigation. Overall, the available structural evidence provides a substantial empirical foundation for the hierarchical architecture of HiTOP while supporting continued refinement of its specific components.

۳,۲,۲. Psychometric Evidence

To evaluate studies examining the psychometric properties and validity of HiTOP, relevant research was reviewed. The selected studies were classified according to the specific aim of validity assessment, type of evidence, characteristics of the study sample, and methodological approach. Particular attention was given to studies providing evidence of construct, convergent, discriminant, and criterion-related validity; studies evaluating the hierarchical organization of HiTOP-related dimensions and their correspondence with established measures of psychopathology were also considered. Because some studies directly evaluated HiTOP dimensions, whereas others examined the validity of measures or mappings developed within the HiTOP framework, the target of validation was explicitly distinguished to avoid conflating evidence concerning the model itself with evidence concerning HiTOP-based measurement instruments. The main characteristics and findings of these studies are presented in **Table ۳**.

Table ۳. Summary of Psychometric Evidence for HITOP Dimension and Measures

Study	Year	Sample	Target of Validation	Type of Evidence	Main Psychometric / Validity Approach
Sellbom	۲۰۲۱	Mental-health and male prison-inmate samples	HiTOP spectra and their hierarchical organization	Construct and criterion-related validity	Confirmatory factor analysis; hierarchical factor analysis; associations with external criteria
Krueger et al.	۲۰۲۱	Evidence synthesized across multiple samples and research domains	Externalizing superspectrum	Integrative validity evidence	Review Genetic, environmental, developmental, cognitive, neural, and treatment-response evidence
Watson et al.	۲۰۲۲	Evidence synthesized across multiple samples and research domains	Emotional Dysfunction superspectrum	Integrative validity evidence	Integrative review of validity evidence across multiple domains
Woodling et al.	۲۰۲۲	Patients with chronic low-back pain	Somatoform spectrum	Convergent and discriminant validity	Associations with external clinical measures; comparison with Internalizing structure
Levin-Aspenson & Zimmerman	۲۰۲۳	Clinical sample	Hierarchical structure of psychopathology / HiTOP	Structural and validity evidence	Empirical evaluation of the hierarchical structure in a clinical sample
Komasi et al.	۲۰۲۳	Individuals with somatic symptom and related disorders and healthy controls	HiTOP spectra in relation to somatization	Construct and criterion validity	ESEM; hierarchical logistic regression; hierarchical linear regression
Faulkenberry	۲۰۲۶	community and undergraduate participants; predominantly young and female.	The hierarchical factor structure and construct validity of the Hierarchical Taxonomy of Psychopathology–Self-Report.	Structural validity and convergent validity.	(EFA), sequential hierarchical factor modeling, correlation analyses, and regression analyses using the Minnesota Multiphasic Personality Inventory-۳ (MMPI-۳) scales.

Note. ESEM: Exploratory Structural Equation Modeling
EFA: Exploratory factor analysis

The psychometric evidence for HiTOP has been examined across different levels of the taxonomy and using different methodological approaches. The available evidence includes direct empirical investigations of HiTOP dimensions and their hierarchical organization, as well as studies examining the validity of established measures and their correspondence with the HiTOP framework. Sellbom et al. (۲۰۲۱) evaluated the correspondence between MMPI-۳ scales and the HiTOP structure in a mental health sample and a male prison sample. Confirmatory factor analyses generally supported the six HiTOP spectra in both samples, although some qualifications were noted. In addition, associations between the latent factors and conceptually relevant external criteria provided further support for their construct and criterion-related validity. Sequential hierarchical factor analyses also replicated most of the HiTOP spectra, indicating that the hierarchical organization of the MMPI-۳ scales was broadly consistent with the HiTOP framework. Evidence concerning the validity of the Somatoform

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spectrum has also been examined in direct empirical studies. Extending this line of research, Faulkenberry et al. (۲۰۲۶) directly examined the hierarchical structure and construct validity of the HiTOP-SR in a sample of ۷۷۵ community and undergraduate participants. Exploratory factor analysis and hierarchical modeling supported a structure consisting of one general psychopathology factor, seven broad domains, and ۱۱ more specific factors. Associations with conceptually relevant MMPI-۳ scales provided preliminary evidence of convergent validity. However, the predominantly young female sample limited the generalizability of the findings, highlighting the need for further replication in diverse populations.

Evidence concerning the validity of the Somatoform spectrum has also been examined in direct empirical studies.Woodling et al. (۲۰۲۲) investigated the placement and validity of the Somatoform spectrum in patients seeking treatment for chronic low-back pain. The results indicated that a model in which Somatoform was represented as a separate spectrum provided a better fit than a model placing it as a subfactor of Internalizing. Associations with external criteria also provided evidence for both convergent and discriminant validity and supported the distinctiveness of Somatoform from Internalizing.

Komasi et al. (۲۰۲۳) further examined the construct and criterion validity of the HiTOP spectra using PID-۵ facets in a large non-Western sample from western Iran. The HiTOP-related higher-order factors were significantly associated with both categorical and dimensional measures of somatization. However, the five-factor structure identified in the study included a narcissism factor rather than an independently extracted disinhibition factor, which raised concerns about the construct validity and cross-cultural generalizability of the HiTOP spectra. The authors also found that maladaptive personality factors provided only a small incremental contribution beyond temperament factors in predicting both somatic symptom and related disorders and dimensional somatization, highlighting potential limitations in the criterion validity of the HiTOP spectra.

Levin-Aspenson and Zimmerman (۲۰۲۳) provided additional empirical evidence by examining different levels of a hierarchical model of psychopathology in a clinical sample of psychiatric outpatients. The study compared the validity and explanatory power of different levels of the hierarchy in relation to clinically relevant variables, including global functioning, inability to work, social functioning, suicidal ideation, suicide attempts, and psychiatric hospitalization. Thus, the study provided empirical evidence relevant to the clinical validity of a dimensional and hierarchical organization of psychopathology rather than focusing solely on the psychometric properties of a specific HiTOP instrument. In addition to these direct empirical investigations, further validity evidence has been synthesized at the level of major HiTOP superspectra. Kotov et al. (۲۰۲۰) reviewed evidence concerning the Psychosis superspectrum, including the coherence of the Thought Disorder and Detachment dimensions. Krueger et al. (۲۰۲۱) synthesized evidence concerning the Externalizing superspectrum, whereas Watson et al. (۲۰۲۲) reviewed evidence relevant to the Emotional Dysfunction superspectrum, including the Internalizing and Somatoform spectra. These reviews integrated findings from genetic, developmental, cognitive, neurobiological, and treatment-related research. Although such evidence contributes to the overall validity of the HiTOP framework, these studies represent integrative validity evidence rather than direct psychometric validation of HiTOP measures or dimensions.

Taken together, the reviewed studies provide empirical evidence supporting several components of the HiTOP framework, particularly the hierarchical organization of psychopathology, the distinctiveness of the Somatoform spectrum, and the associations of HiTOP dimensions with clinically relevant external criteria. At the same time, the findings also indicate that the evidence is not uniformly supportive across all dimensions and validation approaches. In particular, Komasi et al. (۲۰۲۳) identified potential limitations in the construct and criterion validity of HiTOP spectra, while Sellbom et al. (۲۰۲۱) reported qualifications regarding the fit of the proposed spectra across samples. Moreover, the reviewed studies differ in their target of validation: some directly evaluate HiTOP dimensions or their hierarchical organization, whereas others examine the validity of established measures or their mapping onto the HiTOP framework. Therefore, the current psychometric literature supports important components of the HiTOP taxonomy while also indicating the need for further validation across different spectra, populations, and assessment methods.

Beyond psychometric and validity evidence, the empirical evaluation of HiTOP has also been informed by findings from genetic and neurobiological research. These lines of evidence provide complementary support for the hierarchical organization of psychopathology by examining whether broader HiTOP dimensions are associated with shared biological liabilities across traditionally distinct psychiatric disorders. Behavioral genetic, family, and twin studies have consistently demonstrated that multiple psychiatric disorders share common genetic liabilities. These findings provide support for the hierarchical organization proposed by HiTOP by indicating that broad psychopathology spectra may arise partly from shared genetic risk factors, whereas more specific disorders may be influenced by additional environmental and disorder-specific mechanisms (Krueger, ۲۰۰۵; Krueger & Markon, ۲۰۰۶; Lahey et al., ۲۰۱۷). Neurobiological investigations have further supported this framework. Reviews conducted by the HiTOP consortium have synthesized converging evidence from neuroimaging, cognitive neuroscience, and molecular genetics, demonstrating shared biological mechanisms across traditional DSM categories, particularly within the psychosis, internalizing, and externalizing spectra (Kotov et al., ۲۰۲۰).

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Current Limitations and Future Directions

Despite substantial empirical support, several limitations remain. Ringwald et al. (۲۰۲۳) reported that available evidence is currently stronger for some spectra than for others because of differences in the number of published studies. Specifically, insufficient evidence prevented comprehensive evaluation of the hierarchical placement of somatoform symptoms, sexual problems, and bipolar disorders, whereas estimates for psychosis-related dimensions were derived from relatively few studies, resulting in lower precision. Furthermore, much of the existing literature continues to rely on DSM-based diagnostic categories, which remain heterogeneous and highly overlapping. Consequently, the available evidence may not yet fully represent the natural dimensional structure that HiTOP seeks to describe.

Consistent with these observations, Forbes et al. (۲۰۲٤) emphasized that ongoing revision represents a defining characteristic of the HiTOP framework. Accordingly, future research should expand dimensional assessment, evaluate underrepresented psychopathology domains, and continue refining the hierarchical taxonomy as additional empirical evidence accumulates.

Discussion and Conclusion

This study was designed to elucidate the theoretical foundations and conceptual framework of the Hierarchical Taxonomy of Psychopathology (HiTOP) and to examine the psychometric evidence supporting the model**.** First, the findings of this review indicate that HiTOP conceptualizes psychopathology not as a set of discrete diagnostic categories but as a dimensional and hierarchical organization ranging from maladaptive traits and features to syndromes, subfactors, spectra, and, at higher levels, superspectra and the general psychopathology factor (p)**.** Within this framework, comorbidity and symptom overlap are not viewed merely as problems for drawing diagnostic boundaries; rather, they provide a basis for identifying shared dimensions and transdiagnostic structures of psychopathology. This finding is consistent with Krueger (۲۰۲٥), who, in reviewing recent developments in HiTOP, emphasized its dimensional and hierarchical architecture and the organization of psychopathology across multiple levels. Cicero et al. (۲۰۲٤) provide a useful account of this finding by highlighting that the hierarchical architecture of HiTOP allows psychopathology to be represented at different levels of breadth, extending from broad superspectra at higher levels to individual signs and symptoms at lower levels**.** Higher levels thus capture features shared across different forms of psychopathology, whereas lower levels preserve more specific information about symptoms, traits, and syndromal patterns. This structure allows HiTOP to move beyond the boundaries of categorical diagnoses and capture both the severity and breadth of psychological problems across different levels of psychopathological organization. As Cicero et al. (۲۰۲٤) noted, this flexibility may allow HiTOP to be used for purposes ranging from broad assessment to the identification of more specific intervention targets at different levels of the hierarchy.

Second, the findings of this review indicate that several HiTOP components and dimensions have received empirical support for construct, convergent, discriminant, and criterion-related validity, although the strength and consistency of this evidence vary across spectra, samples, and validation approaches. Studies such as Sellbom et al. (۲۰۲۱) and Woodling et al. (۲۰۲۲) provided evidence supporting the structure and validity of several HiTOP spectra, whereas Komasi et al. (۲۰۲۳) identified limitations in the construct and criterion-related validity of the HiTOP spectra in certain respects. This pattern is consistent with findings from Williams et al. (۲۰۲٥), who showed that the criterion validity of hierarchical dimensions of psychopathology depends not only on the construct and criterion being examined but also on how hierarchical dimensions are operationalized and on the statistical methods used. In particular, the performance of different approaches for estimating associations between hierarchical dimensions and external indicators varied depending on the psychopathology outcomes considered. The findings of Levin-Aspenson and Zimmerman (۲۰۲۳) provide a further explanation for this pattern, showing that associations with clinically relevant indicators differ across levels of the hierarchy and that the level with the greatest validity and explanatory power depends on the outcome being examined. Thus, the heterogeneity of psychometric evidence for HiTOP should not necessarily be interpreted as evidence against the validity of the framework. Rather, it suggests that the validity of a hierarchical model needs to be evaluated in relation to the level of the hierarchy under consideration, the specific construct or spectrum, sample characteristics, external criterion, and validation method. Some of this heterogeneity may also reflect differences in the target of validation: whereas some studies directly evaluate HiTOP dimensions and their hierarchical organization, others examine the validity of existing measures or their correspondence with the HiTOP framework. Taken together, the findings support important components of HiTOP while underscoring the need for continued validation across spectra, populations, and assessment methods.

From a theoretical perspective, HiTOP can also be considered alongside cybernetic models of psychopathology. DeYoung and Krueger (۲۰۱۸) conceptualized psychopathology within a cybernetic framework, emphasizing persistent difficulties in moving toward important goals. Such difficulties may arise from failures to establish effective goals, develop appropriate interpretations, or implement effective strategies. This perspective

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provides a useful theoretical complement to dimensional models such as HiTOP by shifting attention from diagnostic categories toward patterns of dysfunction within psychological systems. From this perspective, psychopathology may emerge from interactions among processes involving emotion, cognition, motivation, and behavioral regulation. Importantly, however, the cybernetic perspective should be understood as a theoretical account of psychopathology rather than as empirical validation of the HiTOP hierarchy itself**.** Bringing these perspectives together may therefore help connect empirically derived dimensions of psychopathology with theories about the psychological processes through which these dimensions emerge and are maintained.

Despite its considerable potential, HiTOP also faces several limitations. Wittchen and Beesdo-Baum (۲۰۱۸) argued that dimensional and hierarchical models raise important conceptual and methodological questions that cannot be resolved through cross-sectional structural analyses alone. In particular, a statistical structure derived from measurements collected at a single time point does not necessarily capture the temporal course, developmental processes, or longitudinal organization of psychopathology. Moreover, evidence for a hierarchical structure at the population level does not, by itself, establish its utility for individual-level diagnosis, treatment planning, or clinical decision-making. Thus, at its current stage of development, HiTOP may be more appropriately viewed as a complementary framework rather than as a fully established replacement for existing diagnostic systems. Haeffel et al. (۲۰۲۲) raised additional concerns about the extent to which HiTOP addresses fundamental challenges in the classification of psychopathology. They argued that the factor structure of symptoms, by itself, does not establish a causal structure and that an exclusive focus on symptom covariation may reproduce some of the limitations of descriptive classification. They also questioned whether a single hierarchical structure can adequately capture multifinality, equifinality, developmental processes, and clinically meaningful individual differences. Accordingly, although HiTOP offers a distinct way of representing psychopathology, its hierarchical structure should not be interpreted as evidence for causal mechanisms or as demonstrating that clinically meaningful heterogeneity at the individual level has been resolved.

Overall, the evidence reviewed in this article suggests that HiTOP represents an important development in the empirical study of psychopathology by shifting attention from discrete diagnostic categories toward dimensional and hierarchical patterns of symptoms, traits, and broader domains of psychopathology. The model's primary contribution is not simply to replace one classification system with another, but to provide a framework for examining comorbidity, heterogeneity, and relationships among different levels of psychopathological organization in a more systematic manner. At the same time, the available evidence does not yet support treating HiTOP as a definitive replacement for established diagnostic systems. Important questions remain regarding developmental and longitudinal processes, causal mechanisms, individual-level interpretation, clinical utility, and implementation in routine mental health care. Future research should therefore move beyond identifying the statistical structure of psychopathology and determine whether HiTOP-based assessment can improve prediction, treatment selection, and patient outcomes. HiTOP may also be considered alongside the Research Domain Criteria (RDoC) as a complementary framework. Whereas RDoC emphasizes functional dimensions and underlying biological and behavioral mechanisms, HiTOP focuses more directly on empirically derived and clinically observed dimensions of psychopathology. Integrating these complementary perspectives may help connect clinically observable symptoms and traits with underlying psychological, behavioral, and biological mechanisms, ultimately contributing to a more comprehensive, multidimensional, and evidence-based framework for studying and conceptualizing psychopathology.

Recommended Studies

۱. Revisiting the Hierarchical Taxonomy of Psychopathology (HiTOP) with an emphasis on bio-narrative models to explain bipolar spectrum disorders and validating it within clinical populations.

۲. Revisiting the Hierarchical Taxonomy of Psychopathology (HiTOP) with an emphasis on bio-narrative models to explain somatic symptom disorders and validating it within clinical populations.

۳. Revisiting the Hierarchical Taxonomy of Psychopathology (HiTOP) with an emphasis on bio-narrative models to explain substance use disorders and validating it within clinical populations.

Ethical Considerations

This study was conducted in accordance with established ethical principles for scholarly research. As a narrative review, it involved the analysis and synthesis of previously published literature and did not include human participants, animals, or identifiable personal data. Therefore, formal ethical approval and informed consent were not required.

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Conflict of Interest
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