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Manifestations of personality impairment severity: comorbidity, course/prognosis, psychosocial dysfunction, and 'borderline' personality features

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Impairment in personality functioning (briefly, personality impairment) is the core pathology in personality disorder (PD) and an essential indicator of PD-severity. It also is a difficult construct to define and assess. We argue that personality-impairment severity is a latent construct that can be modeled with four indicators: within-PD comorbidity, problematic course/prognosis of both PD and comorbid clinical syndromes, PD-associated psychosocial dysfunction, and features of *DSM-5*-II borderline PD (BPD). Our literature review documents interrelations among the first three indicators, and studies of PD structure reveal a higher order factor of general PD severity marked most strongly by BPD features. Together, these findings indicate that BPD features may be helpful in the important tasks of defining and assessing personality-impairment severity.

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Impairment in personality functioning (or briefly, personality impairment) is the core pathology in personality disorder (PD) and essential indicator of PD-severity. It also is an elusive construct to define and measure. Yet, it is a primary criterion in both the *DSM-5* [1] alternative model of PD (AMPD) and the *ICD-11* PD proposal [2•]. In the AMPD, a second main criterion is one or more pathological traits, whereas in the *ICD-11* proposal, traits are optional specifiers, largely due to differences in the primary purposes of the two classification systems [3•]. Not unexpectedly, some PD researchers and clinicians have concerns about diagnosing PD solely on the basis of the elusive construct of personality impairment and for many, even having the additional requirement of pathological traits is not entirely satisfactory. We understand the comfort of the relative clarity and familiarity of the main (Section II) *DSM-5* [1] (*DSM-5*-II) criteria, despite the multiple, well-documented limitations of that classification system [4].

In this essay, we argue that PD comorbidity, problematic course/prognosis of PD and comorbid clinical syndromes, psychosocial dysfunction and, perhaps surprisingly, *DSM-5*-II borderline PD (BPD) features are all indicators (i.e., not components *per se*) of the latent construct of PD/personality impairment severity. As such, these indicators can help to guide definition and refinement of the construct.

Comorbidity

Comorbidity — co-occurrence of two putatively distinct disorders — is a concern across all of psychopathology [3•], but for PD, it exposes two fatal nosological flaws: *Most* individuals diagnosed with PD meet criteria for either (a) *two or more* PDs (≥50%)[4,5], yet they have only one personality, indicating invalid categorical structure; or (b) *none* of *DSM*'s specific PDs (M = 34%) [6], indicating poor nosological coverage. Thus, no more than 16% of individuals with PD meet criteria for only one type. Consequently, although considerable research-based information has accrued from studies focused on specific *DSM-5*-II PDs, interpreting these findings is problematic due to rampant comorbidity, which is rarely controlled in such studies. However, this confound is almost universally ignored and findings are interpreted as if they were relevant only to the target PD. This is clearly unwarranted and should be eschewed by reviewers and editors, not to mention researchers themselves. Moreover, almost no research has focused on the one-third of individuals with PD who do not meet criteria for any specific disorder, so we actually know much less about PD in general than the total amount of research would suggest.

Within-PD comorbidity and PD-severity

Within-PD comorbidity is rampant, such that every PD diagnosis has some degree of comorbidity with nearly every other [7]; moreover, when PD diagnoses are scored dimensionally, virtually all correlations among them are positive [8,9,10•]. However, this comorbidity is not random, and a meta-analysis of 33 factor-analytic studies of PD structure [11] in various formats (e.g., both PD criteria and diagnoses) plus PD — five-factor model (FFM) of

personality relations showed good convergence on two through four factors, as well as convergence with parallel analyses of the FFM. All four-factor models (i.e., PD only, FFM only, and PD–FFM) — which were the most congruent at .99 for a targeted rotation — reflected neuroticism/negative affectivity (e.g., dependent, avoidant, and BPD), antagonism (e.g., antisocial and narcissistic PDs), pathological introversion (e.g., schizoid and schizotypal PDs), and conscientiousness/obsessive–compulsive PD. Analyses based on PD criteria alone were able to extract more — five [12], six [13], or even 10 [14] — factors, but not even the last analysis replicated the 10 *DSM* PD categories (specifically, a confirmatory 10-factor analysis was a poor fit to the data). Although the 10-factor exploratory model fit well and roughly approximated the *DSM* PDs, the four-factor and five-factor models also fit well. Moreover, the researchers did not use fit indices that penalize models with more parameters, which were quite different for the 5-factor and 10-factor models (71 vs. 340, respectively), so the 10-factor model likely was overfit, capitalizing on chance associations in the dataset. In sum, the within-PD comorbidity data clearly indicate the invalidity of the current *DSM* categorical PD system. Nonetheless, we can use within-PD comorbidity and related measures (e.g., total criterion scores) as an indicator of PD-severity. However, this is only a temporary expediency because it is based on the very system that *ICD-11* and the AMPD are designed to replace.

PD-comorbidity/severity and overall psychopathology severity

First, it is noteworthy that PD-clinical syndrome comorbidity is as strong or stronger than within-PD comorbidity [5,15], and a great deal of research on many clinical syndromes has shown that having one or more comorbid PDs is associated with greater clinical-syndrome severity. A 2007 review [4] found strong associations with several indicators of diagnostic severity: earlier age of onset of psychological problems, greater medical utilization, more suicide attempts and completions, and risk of psychopathology in offspring. However, a parallel statement can be made regarding comorbidity between virtually any pair of psychological disorders [16], so this literature is not directly germane to our primary argument, and we keep our focus on the smaller within-PD comorbidity literature.

In a large ($N = 2150$) sample of psychiatric outpatients with one or more PDs [5], almost all of whom had one or more comorbid clinical syndromes (median = 3.1), there were significant associations between having one (vs. more-than-one) comorbid PDs and all six indicators of disorder severity they examined: number of current and lifetime clinical syndromes, poorer global assessment of functioning, amount of suicidal ideation, number of suicide attempts, and psychiatric hospitalizations.

Several studies have used Tyrer's [17,18] system, which calculates four PD-severity levels using interview-based ratings of 24 personality traits, each of which ranges from normal/adaptive to extremely maladaptive. This PD-severity system thus has a clear advantage over within-PD comorbidity in that it avoids using the categorical systems it is designed to replace. Nonetheless, highly similar results can be derived using current categorical systems: no PD, subthreshold PD, simple PD (one or more PDs in the same *DSM-IV/ICD-10* cluster), and complex PD (two-or-more PDs in more-than-one cluster). Researchers in the U.S. typically use the system based on *DSM-IV* diagnoses, whereas researchers elsewhere typically use either Tyrer's original trait method or *ICD-10*.

Researchers using the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) data [19] collapsed the two lowest levels of PD-severity and found that both co-occurrence of 15 clinical syndromes (e.g., alcohol dependence, major depressive disorder [MDD]) and level of impairment associated with each syndrome increased with each level of PD-severity. In a randomized clinical trial for patients with MDD, depression-severity and PD-severity were correlated at each time point assessed: 0 (baseline), 6, and 12 months [20]. Other associations using Tyrer's PD-severity measure include likelihood of recurrence of self-harm [21], a composite of seven measures of clinical severity across three age groups in an inpatient sample [22], increased rates of psychopathology in seven alcohol-and-drug centers in the U.K. [23], and more psychopathology and service utilization in an epidemiological sample [24]. In male forensic patients [25], PD-severity, operationalized as a total-criterion sum score, correlated with total scores on a broad clinical-symptom measure. In sum, various measures of PD-severity, related in diverse ways to PD-comorbidity, consistently correlated with severity of comorbid clinical syndromes, also assessed in various ways.

Associations of PD-comorbidity/severity with course/prognosis and psychosocial dysfunction

Similarly to general psychopathology severity, a great deal of research has shown that having a comorbid PD is associated with a more difficult course and/or poorer prognosis in clinical syndromes, and also with increased psychosocial dysfunction, such that it has been the focus of at least three reviews [15,16,26]. Again, however, our focus is on the effect of increased within-PD comorbidity and related measures as an indicator of PD/personality impairment severity, which only a few studies have examined (including some cited above).

In the aforementioned large sample of psychiatric outpatients [5], within-PD comorbidity correlated with amount of time unemployed in the past 5 years. Number of PD diagnoses was associated with significantly longer

time to remission in a mixed psychiatric sample [27]. At discharge, inpatients with panic disorder with agoraphobia who had higher total PD criterion scores also had more persistent interpersonal problems [28]. Using the Wave 8 (age 24–25) data from a large-scale epidemiological study, researchers found that PD-severity assessed with an interview similar to Tyrer's [29] predicted not only increased risk of MDD and anxiety disorders, but also greater likelihood of unemployment, being on welfare, and being divorced or never married a decade later [30].

Associations using Tyrer's PD-severity measure also produced similar findings: It correlated with all functional outcomes in the aforementioned inpatient groups stratified by age [22], and with school expulsion, legal involvement, and unemployment in the epidemiological study [24]. A study that used a total criterion score reported a correlation with family disturbance in eating-disorder patients, but not with eating-disorder severity [31]. Other studies also have found eating disorder to be an exception to the general pattern [4]. Overall PD-severity, assessed using the general factor of a bifactor analysis was the strongest predictor of all measures of psychosocial dysfunction in a large, high-risk community sample [10].

Studies also are beginning to emerge that have used measures of personality impairment as conceptualized in *ICD-11* or the AMPD. The fact that they yield similar results to those reviewed supports our interpretation of PD-comorbidity as an indicator of personality dysfunction. Two studies reported results based on a definition of PD-severity in an early version of the *ICD-11* proposal: In Korean psychiatric patients, 'increased clinical pathology and social dysfunction' [32, p. 67] both were associated with PD-severity, as was the total score on a problem-behavior check-list in a sample of individuals with intellectual disability [33]. Finally, an overall dysfunction score correlated with an aggregated measure of AMPD personality impairment [34•].

PD-comorbidity, a general factor of PD-severity, and BPD

Research evidence supporting a common dimension underlying all PD is strong [35••,36••,37,38], and empirical data regarding the nature of this general PD dimension are accruing. Hierarchical analysis of the Personality Inventory for *DSM-5* [39] (PID-5) suggested that the general PD dimension reflects trait extremity, with 'internalizing' dimensions Negative Affectivity and Detachment tapping it most strongly, followed by Antagonism [40]. Notably, of the six specific AMPD PDs, only BPD is composed of traits from all three of these domains. Using a subset of *DSM-IV* PD criteria (four PDs were omitted due to low base rates), nine of the 13 strongest markers of a bifactor model's general factor had *no* loading >.40 on any specific factor; eight of these were BPD criteria, with only 'transient paranoia/dissociation' not showing this pattern [35••]. A replication study using all *DSM-IV* PD criteria (except for four individual criteria with very low endorsements) obtained somewhat similar results: seven of 17 such markers were BPD criteria (self-destructive impulsivity and suicidality did not show this pattern), five were paranoid PD criteria, and three were narcissistic PD criteria [41]. Finally, in our own (unpublished) data, five of nine such markers were BPD criteria and no other PD had more than two criteria. Moreover, the five criteria that showed this pattern across all three data sets were all BPD criteria: abandonment fears, unstable interpersonal relationships, identity disturbance, affective instability, and chronic emptiness.

Further, BPD had clearly the strongest loading on the general-PD factor in a confirmatory factor analysis of all *DSM-IV* PD diagnoses assessed over five waves, each 2 years apart [37]. Using items from two measures of the AMPD, a global personality-pathology scale was developed using item-response theory, severity scores were calculated, and *DSM-IV* PD criteria used as predictors; BPD, then avoidant PD criteria had the strongest mean coefficients [42]. Together, these empirical results suggest that of all current categorical PDs, BPD most strongly reflects a general personality-pathology dimension. Given also BPD's considerable heterogeneity, which has resulted in multiple subtyping proposals [43–45], it may be more fruitful to reconceptualize BPD — and particularly the criteria tapping impairment in self and interpersonal pathology — respectively, identity disturbance/emptiness and unstable relationships/abandonment fears — as reflecting a broad, general dimension of PD-severity rather than a specific PD category.

That one of the 10 *DSM-5* PDs should be most closely aligned empirically with the emerging reconceptualization of PD — self-and-interpersonal dysfunction, manifested in myriad maladaptive trait profiles — will not surprise those who know BPD's diagnostic history. Prior to *DSM-III*, Spitzer, Endicott, and Gibbon [46] reviewed the 'borderline' literature, which they described as 'contradictory and often obscure' (p. 17), discerned two primary uses of the term, and developed criterion sets for each. One, more closely aligned with schizophrenia, became *DSM* schizotypal PD. The other — based conceptually on Kernberg's [47] writings on 'borderline personality organization,' which included 'a rather specific and remarkably stable form of pathological ego structure' (p. 641) [47] and troubled interpersonal relationships — became *DSM* borderline PD.

Summary/conclusion

We have reviewed various indices of PD-severity: within-PD comorbidity, Tyrer's four-level system based on either maladaptive traits or *DSM-5*-II/*ICD-10* criteria, criterion total scores, measures based on the AMPD

and proposed *ICD-11* conceptualization of personality-impairment severity, and a general factor derived via various factor-analytic methods. Although no single study has correlated all these measures directly, their correlates are strikingly similar: general psychopathology severity measured in multiple ways, poorer course and outcomes of both PD and comorbid clinical syndromes, and diverse types of psychosocial dysfunction. Almost a quarter-century ago, a general review [16] stated, 'In many contexts, assessing the severity of dysfunction may be as or more important than specifying the precise nature of the disorder' (p. 132). Considerably more evidence now supports this statement, but it also is the case that in other contexts (e.g., treatment selection) more specific information is needed. For PD, that information is carried by personality traits, for which there now are various psychometrically sound measures. Thus, the primary task ahead is to define and assess the PD general factor more clearly and specifically. This review suggests that we may do well to consider certain key features of current BPD as a starting point.

Conflict of interest statement

Nothing declared.

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Papers of particular interest, published within the period of review, have been highlighted as:

- • of special interest
- •• of outstanding interest

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2. • *International Classification of Diseases, Eleventh Edition*. World Health Organization; forthcoming.

By international treaty, WHO's Member States, including the U.S., agree to use the ICD as a framework for reporting health information, so that the data are internationally comparable. However, the U.S. only recently adopted ICD-10, first published in 1992, and it is uncertain when it will fulfill its obligation to adopt ICD-11.

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Using bifactor analysis, the authors found a general PD severity factor, 60% of which were *DSM-IV* borderline PD criteria. Furthermore, BPD criteria had only two moderate cross-loadings onto specific factors. Conversely, schizotypal PD criteria largely only defined a specific factor, whereas those for antisocial, narcissistic, obsessive–compulsive and avoidant PD loaded on both general and specific factors.

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