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Article in The Journal of nervous and mental disease · June 2009
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The Personality Organization Diagnostic Form
Development of a Revised Version

Dominick Gamache, MP,* Olivier Laverdière, MP† Louis Diguer, PhD,* Étienne Hébert, PhD‡ Sébastien Larochelle, PhD,§ and Jean Descôteaux, PhD$"}

Abstract: The purpose of this study is to examine the interrater reliability, validity, and internal consistency of a revised version of the Personality Organization Diagnostic Form (PODF; Diguer et al., 2001), a measure that evaluates the major dimensions of Kernberg’s model of Personality Organizations (PO). Results show that the revised PODF can be scored with an interrater reliability ranging from good to excellent for the personality dimensions and the global PO (GPO) score. Factor analysis shows that items tend to regroup according to Kernberg’s model. The optimal solution includes 2 factors: a borderline-neurotic continuum and a psychotic factor. Internal consistency and convergence with clinical evaluations also indicate moderate to good validity. Convergent validity with mental health and psychiatric severity is good, and in accordance with Kernberg’s model. The revised PODF therefore appears to possess sound psychometric properties, with numerous advantages over its predecessor. Its utility for clinical and research work is also discussed.

Key Words: Personality measures, personality processes, psychodiagnosis, test validity, test reliability, defense mechanisms, object relations.

(J Nerv Ment Dis 2009;197: 368 –377)

The Personality Organization Diagnostic Form (PODF; Diguer and Normandin, 1996) is a measure designed to evaluate personality organization (PO) and its main dimensions according to Kernberg’s model of personality (e.g., Kernberg, 1980, 1984). A previous study (Hébert et al., 2003) indicated good reliability and validity for the PODF. It has been used in several studies, examining, for example, self- and object representations in relation with PO and psychiatric severity (PS; Diguer et al., 2004), and relationship patterns (Core Conflictual Relationship Theme) in relation with PO (Diguer et al., 2001). However, Hébert et al. (2003) has pointed out some modifications that could improve the PODF. Therefore, a revised version of the instrument has been developed (Diguer et al., 2001). This new version is currently being used in a variety of clinical and research settings, e.g., the study of interrelations between PO, Big Five personality factors, and mental health (Laverdière et al., 2007), of transference manifestations in relation with PO (Diguer et al., 2008; Gamache et al., 2005), and in the study of various nonclinical and clinical groups, from high-functioning university athletes (Hébert et al., 2005) to juvenile and adult sex offenders (Gamache et al., 2007; Larochelle et al., 2009; Rousseau, 2004). The current paper has 2 objectives: (a) to report on the development of the revised version of the PODF; and (b) to empirically evaluate the psychometric properties of this revised instrument in terms of interrater reliability, internal consistency, factor structure, and concurrent and convergent validity.

Over the last 40 years, Otto F. Kernberg has developed a model of personality functioning and disorders centered on the concept of PO. Kernberg (1984; Kernberg and Caligor, 2005) defines PO as a stable, mostly unconscious and dynamically organized structure that incorporates early experiences and phase-specific drive structures into a coherent organization; it refers to repetitively activated, functionally defined processes involved in motivation, regulation of mood, and regulation of impulses, which normally serve adaptive functions, but can also become dysfunctional (Westen et al., 2006). PO pertains to mostly unconscious contents and processes such as object relations (OR), defense mechanisms, and unconscious dimensions of self and other representations. The model includes 3 POs (the psychotic PO [PO P], the borderline PO [PPO], and the neurotic PO [NPO]), which are defined by 4 main dimensions: identity integration-diffusion, defense mechanisms, reality testing, and OR (which are mental representations of self and other interactions). Kernberg’s model encompasses pathological and normal conditions; it ranges from extremely disturbed PPO, through relatively reality-oriented adaptive BPO and high-level functioning NPO to normal personality functioning. Individuals with PPO present atypical forms of psychosy, with a loss of reality testing, severe identity diffusion, and use of primitive defenses, mainly denial. The BPO includes several PO subtypes: schizotypal, schizoid, paranoid, antisocial, malignant narcissistic, borderline, narcissistic, sadomasochistic, histrionic, and dependent. BPO is characterized by identity diffusion, predominance of primitive defense mechanisms, and maintenance of reality testing in spite of transitory and egodystonic psychotic manifestations. Subjects diagnosed with BPO often meet DSM-IV axis II criteria for personality disorders, although POs do not have a one-to-one correspondence with DSM-IV-TR axis II disorders (American Psychiatric Association, 2000). The NPO includes the depressive-masochistic, obsessive-compulsive, and hysterical subtypes. It is characterized by identity integration, predominance of mature defenses based on repression, stable reality testing, capacity for deep, caring, and intimate relationships with others, good anxiety tolerance, impulse control, and effectiveness and creativity in work. In their most recent theorizations, Kernberg and his group have improved their understanding of normal personality (Clarkin et al., 2007b; Kernberg and Caligor, 2005). However, the fundamental difference between NPO and normal PO appears to be quantitative, rather than qualitative, in nature. Both share the same structural characteristics in terms of identity integration, mature defenses, good reality testing, and triangular ORs. Individuals with normal personality reach higher levels on these dimensions, and exhibit superior flexibility (e.g., in the experience and expression of affective states, sexual and aggressive impulses, dependency needs, and in the development of an internalized moral values system) than NPO individuals, who tend to show what Kernberg has labeled “character rigidity.”
Drawing directly from this PO model, Kernberg’s group has developed since 1980 a specific treatment called transference-focused psychotherapy (TFP). TFP for BPO has been manualized (Clarkin et al., 1999, 2006). After showing encouraging results in terms of effectiveness (Clarkin et al., 2001; Clarkin et al., 2004; Diamond et al., 2003), a recent randomized clinical trial comparing TFP, dialectical behavior therapy, and modified psychodynamic supportive psychotherapy strengthened the original promising results (Clarkin et al., 2007c; Levy et al., 2006). The study showed the efficacy of TFP in reducing suicidality, anger, aggression, anxiety and depression, in improving global functioning, social adjustment, and reflective functioning, and in increasing significantly the number of patients classified with a secure attachment type. TFP for NPO has also been recently developed and manualized (Caligor et al., 2007).

PO is therefore a concept of high clinical relevance, and it is extensively described in the clinical literature. It is also very relevant to current academic discussions on the nature of personality and personality disorders (categorical vs. dimensional, pathology vs. normalcy, etc.; e.g., Lenzenweger and Clarkin, 2005). However, PO remains largely under-studied and very few empirical data have been published, in part, because of the scarcity of reliable measures for this concept. Early enthusiasm for self-report instruments such as the Inventory of PO (IPO; Kernberg and Clarkin, 1995) was tempered by doubts as to whether self-reports of personality disordered individuals correspond to clinical assessments made by skilled clinicians (Lenzenweger et al., 2001). Kernberg and Caligor (2005) express the same doubts, suggesting that individuals with personality pathology may not be sufficiently aware of certain pathological personality traits to report on them; they may lack insight into the effect their behavior has on others, or may even lie and deny negative personality features (Westen and Shedler, 1999a; Zimmerman, 1994). Consequently, the recent trend has moved away from self-report instruments toward semi-structured interviews (e.g., the McGlashan Semistructured Interview; Goins et al., 1995) or clinician-based Q-sort scoring instruments (e.g., the Shedler-Westen Assessment Procedure; Westen and Shedler, 1999a, 1999b). Wallerstein (2005), in a recent review of existing PO measures, has underlined that although various measures appear promising, they are still in various stages of establishing their psychometric properties. Further, even though existing PO instruments are all based on a psychodynamic approach of personality, few of these measures are based on a clear, well-defined, and clinically informed theory of normal and pathological personality such as Kernberg’s.

Kernberg’s research group has recently developed and validated the Structured Interview of PO (STIPO; Clarkin et al., 2007a), which has been described as an outgrowth from Kernberg’s PO model. This highly structured and standardized interview aims at assessing identity, primitive defenses, reality testing, as well as quality of ORs, coping and rigidity, aggression, and moral functioning. The standardization and sophistication of the STIPO’s administration procedure, as well as its sound theoretical grounding, make it an appealing instrument for PO evaluation. Preliminary reports about its psychometric properties (internal consistency, convergent and predictive validity) have been promising (Stern et al., 2004). However, some of the instruments’ strongest assets (i.e., its standardization and sophistication) may also be viewed as noteworthy limitations: it leads to a lack of flexibility, with scoring exclusively relying on a lengthy and complex interview. Clarkin et al. (2007a) also acknowledge that a competent administration of the interview is limited to experienced, psychoanalytically oriented mental health professionals very familiar with the constructs underlying PO assessment.

The aforementioned considerations were crucial in the development of the first version of the PODF (Diguer and Mandminard, 1996), a clinician-rated instrument that draws directly from Kernberg’s PO model. One of the decisive advantages of the PODF over other existing PO measures is its flexibility. It was indeed developed to be used with natural data coming from various clinical materials: psychological evaluations, relationship narratives, therapy and intake sessions, self- and other descriptions, process notes, and archival data. This first version of the instrument evaluated Kernberg’s 4 main dimensions (identity, defenses, reality testing, and ORs) with 16 dichotomous items (Table 1). A preliminary study (Hébert and Diguer, 1999) yielded fair to excellent interrater reliability, as well as good internal consistency. These results were confirmed in a second study (Hébert et al., 2003), which reported good interrater reliability for the 4 personality dimensions and the type of PO. This latter study also reported a 2-factor solution that was an accurate reflection of Kernberg’s model, with a “borderline” factor and a “psychotic” one. Internal consistency, reliability, and correlations with PS also indicated moderate to good construct validity. However, the study also revealed some limitations of the measure. Much like the IPO, it did not include items reflecting neurotic and normal functioning in terms of identity integration, mature defenses, and adequate reality testing. Identity integration and mature defenses scores were given by default when identity diffusion and primitive defenses were not observed, but this rather simplistic scoring method does not allow for any description or quantification of more well-adapted features present in an individual. It was therefore proposed to add items pertaining to NPO and normal personality to improve differential diagnosis and the validity of the measure. It was also noticed that dichotomous items (absence vs. presence) should be replaced by ordinal scales, which allow more fine-tuned scoring and analyzes (e.g., factor analysis, intraclass correlations (ICCs), Cronbach’s α), and an enhanced capacity to establish individual profiles on PO variables.

Taking these suggestions into account, an improved version of the PODF was developed (Diguer et al., 2001). Table 1 presents a detailed description of this version, as well as a comparison with the original one. In brief: (a) 11 NPO and normal personality items were added (6 items measuring identity integration, 5 items measuring neurotic and mature defense mechanisms); (b) dichotomous items were replaced by scales ranging from 0 to 3 for primitive defenses, mature defenses, and reality testing, where 0 = absence of a given item, 1 = rare but clearly identifiable occurrences of a given item, 2 = moderate occurrence of a given item, and 3 = frequent occurrence of a given item, which can be considered as typical of the individual’s functioning. Identity items, for their part, appeared to be better represented by a continuum ranging from −3 (corresponding to identity diffusion manifestations such as split self- and object representations, and feeling of emptiness) to 3 (corresponding to identity integration manifestations, such as integrated self- and object representations, and feeling of secure self-identity). We believe that the revised PODF is closer to Kernberg’s model, which integrates dimensional and categorical approaches. The revised PODF is also more consistent with dimensional views of personality disorders, which are receiving a growing support in clinical and research literatures (e.g., Mullins-Sweatt and Widiger, 2006; Westen and Shedler, 1999a, 1999b). Further, by allowing a better quantification of the various PO dimensions and items (instead of a simple dichotomous present vs. absent presentation of the various items and dimensions), the revised PODF also permits a more precise and clinically useful description of the participants; it provides profiles of PO items and dimensions that can help case formulation and hence enhance its value for treatment planning, for example.

Other minor changes include: (a) the addition of 1 item (subjective experience of self in time) in the identity dimension; (b) the subdivision of the contradictory self and object perceptions item into 2 distinct items: self-perceptions and object perceptions. This subdivision was based on previous empirical works showing only...
moderate correlations between self- and object representations (Bender et al., 1997; Diguer et al., 2004); furthermore, Diguer et al.’s study revealed that self- and object representations differ in their capacity to explain PO variance, the former being a more powerful predictor than the latter; (c) the deletion of projective identification due to poor interrater reliability; and (d) the combination of omnipotent self-representations and primitive idealization into 1 new item, omnipotence. This decision was guided, in part, by our observation that in many instances where primitive idealization was present, it actually served a self-aggrandizement purpose for the individual; then, it becomes very difficult to determine whether the idealization was really directed toward the object or whether it was used to bolster the individual’s own sense of omnipotence (e.g., personal aggrandizement from a perceived association with ideal figures; Kernberg, 1984). The 4 latter changes were guided by preliminary pilot studies (that are not reported here) designed to assess the feasibility and the reliability of the scoring system. Also, some mature defense mechanisms, such as sublimation, reaction formation, and undoing, were tested but finally not included because pilot studies showed them to be too difficult to score with adequate

### TABLE 1. Comparison Between the Original and the Revised Version of the PODF

<table>
<thead>
<tr>
<th>Original Version (Diguer and Normandin, 1996)</th>
<th>Revised Version (Diguer et al., 2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identity diffusion dimension</strong></td>
<td><strong>Identity diffusion vs. integration dimension</strong></td>
</tr>
<tr>
<td>Evaluated through 4 dichotomous items (absence vs. presence):</td>
<td>Evaluated through 6 scales ranging from −3 (identity diffusion) to 3 (identity integration):</td>
</tr>
<tr>
<td>Subjective experience of emptiness</td>
<td>Feeling of emptiness vs. feeling of secure self-identity (experience of self)</td>
</tr>
<tr>
<td>Contradictory self and object perceptions</td>
<td>Split vs. integrated self-perceptions</td>
</tr>
<tr>
<td>Contradictory behaviours</td>
<td>Discontinuous vs. continuous experience of self in time (experience in time)</td>
</tr>
<tr>
<td>Shallow perception of others</td>
<td>Nonintegration vs. integration of behavior and emotion (behavior-emotion integration)</td>
</tr>
<tr>
<td><strong>Primitive defenses dimension</strong></td>
<td><strong>Primitive defenses dimension</strong></td>
</tr>
<tr>
<td>Includes 7 dichotomous items (absence vs. presence):</td>
<td>Includes 5 scales ranging from 0 (absence) − 3 (frequent usage of the defense):</td>
</tr>
<tr>
<td>Denial</td>
<td>Denial</td>
</tr>
<tr>
<td>Splitting</td>
<td>Splitting</td>
</tr>
<tr>
<td>Omnipotent self-representations</td>
<td>Omnipotence</td>
</tr>
<tr>
<td>Primitive idealization</td>
<td>Omnipotent control</td>
</tr>
<tr>
<td>Omnipotent control</td>
<td>Primitive devaluation</td>
</tr>
<tr>
<td>Primitive devaluation</td>
<td></td>
</tr>
<tr>
<td>Projective identification</td>
<td></td>
</tr>
<tr>
<td><strong>Mature defenses dimension</strong></td>
<td><strong>Mature defenses dimension</strong></td>
</tr>
<tr>
<td>Not measured</td>
<td>Measured with 5 scales ranging from 0 (absence) to 3 (frequent usage of the defense):</td>
</tr>
<tr>
<td></td>
<td>Mature idealization</td>
</tr>
<tr>
<td></td>
<td>Mature devaluation</td>
</tr>
<tr>
<td></td>
<td>Isolation</td>
</tr>
<tr>
<td></td>
<td>Rationalization or intellectualization</td>
</tr>
<tr>
<td></td>
<td>Denegation or suppression</td>
</tr>
<tr>
<td><strong>Reality testing dimension</strong></td>
<td><strong>Reality testing dimension</strong></td>
</tr>
<tr>
<td>Evaluated through 4 dichotomous items (absence vs. presence):</td>
<td>Evaluated through 4 scales ranging from 0 (absence) to 3 (frequent occurrence of reality testing impairments):</td>
</tr>
<tr>
<td>Lack of differentiation between self and others</td>
<td>Lack of differentiation between self and others (self-other differentiation)</td>
</tr>
<tr>
<td>Failure to identify the origins of perceptions</td>
<td>Failure to identify the origins of perceptions (hallucinations)</td>
</tr>
<tr>
<td>Lack of the capacity to evaluate one’s experience in terms of social norms</td>
<td>Lack of the capacity to evaluate one’s experience in terms of social norms (evaluation of social norms)</td>
</tr>
<tr>
<td>Grossly inappropriate affects, thoughts or behaviours</td>
<td>Grossly inappropriate affects, thoughts or behaviours (inappropriateness)</td>
</tr>
<tr>
<td><strong>OR dimension</strong></td>
<td><strong>OR dimension</strong></td>
</tr>
<tr>
<td>Includes 1 ordinal item ranging from 1–5:</td>
<td>Includes one better-defined ordinal item ranging from 1–5 with subtypes for each OR:</td>
</tr>
<tr>
<td>Symbiotic OR with fear of annihilation</td>
<td>Symbiotic OR with fear of annihilation (no subtypes)</td>
</tr>
<tr>
<td>Low-level borderline OR with fear of object and control of object</td>
<td>Low-level borderline OR with fear of object (schizotypal, schizoid, and paranoid subtypes)</td>
</tr>
<tr>
<td>Low-level borderline OR with exploitation and control of object</td>
<td>Low-level borderline OR with exploitation and control of object (antisocial and malignant narcissistic subtypes)</td>
</tr>
<tr>
<td>High-level borderline OR with fear of abandonment</td>
<td>High-level borderline OR with fear of abandonment and aloneness (borderline, narcissistic, sadomasochistic, histrionic, and dependent subtypes)</td>
</tr>
<tr>
<td>Oedipal OR with fear of castration</td>
<td>Triadic OR with fear of retaliation (depressive, obsessive-compulsive, and hysterical subtypes)</td>
</tr>
</tbody>
</table>
reliability, or because their occurrences were too low. Finally, developmental considerations from other prominent psychoanalytic authors such as Bergeret (1974), Jacobson (1964), and Mahler et al. (1975) were integrated in the PODF Scoring manual (Diguer et al., 2006), to facilitate its scoring.

Therefore, this revised PODF includes 21 items. Once all items are rated, dimensional scores are calculated by summing the scores of items inside each dimension. Dimensional scores range from −18 to 18 for identity, from 0 to 15 for primitive defenses, from 0 to 15 for mature defenses, and from 0 to 12 for reality testing. On the OR dimension, raters must identify which of the 5 levels of OR (symbiotic, low-level borderline with fear of the object, low-level borderline with exploitation and control of the object, high-level borderline with fear of abandonment and aloneness, or triadic with fear of relocation) best reflects the subject’s interpersonal relationships using guidelines provided in the scoring manual (e.g., whether the individual experiences affects such as envy, rivalry, jealousy; what is the typical form of anguish experienced by the subject—being hurt, abandoned, annihilated, rejected, punished; to what extent is pathological aggression present; etc.). Finally, a GPO diagnosis (i.e., PPO, BPO, or NPO) is given according to the scoring of the dimensions. In brief, PPO is scored when identity diffusion, primitive defenses, impaired reality testing, and symbiotic OR are present (a dimension is considered present when its dimensional score exceeds midpoint). BPO is scored when there is identity diffusion, primitive defenses, good reality testing, and 1 of the 3 subtypes of borderline OR. NPO is scored when there is identity integration, mostly mature defenses, good reality testing, and triadic OR. The PODF does not yet discriminate normal PO from NPO; as aforementioned, normal individuals should reach higher scores on identity integration, mature defenses, good reality testing, and triadic OR than NPO. The development of normative data that would allow us to calculate dimensional cutting points between these 2 populations represents one of the next steps in the development of the PODF. The training of PODF raters, which mainly consists in scoring 10 exercise protocols, takes approximately 20 hours. A detailed description of the revised PODF, including its training and scoring procedures, is provided in the PODF Scoring Manual (Diguer et al., 2006), which is available on demand.

OBJECTIVES

The purpose of this paper is to examine the psychometric properties of the revised version of the PODF. More specifically, we aim to evaluate its interrater reliability, construct validity, concurrent validity, and convergent validity.

METHOD

Participants

A total number of 285 participants were recruited for the present study. The sample included 211 outpatients (74.0% of the total sample) and 74 nonclinical participants (26.0% of the total sample). Outpatients were recruited in the clinic of the School of Psychology of Université Laval (n = 86, 30.2% of the total sample) and in the outpatient clinic of a Quebec City psychiatric hospital (n = 125, 43.9% of the total sample); nonclinical participants were recruited via an ad published in a local newspaper (n = 34, 11.9% of the total sample) and from a population of university students (n = 40, 14.0% of the total sample). Participants were recruited in clinical and nonclinical populations to cover the continuum ranging from severely disturbed to highly functioning psychological conditions. Fifteen professional psychologists working in these sites collaborated to the study. During intakes, they invited participants to take part in a study on the relation between personality, human relationships, and psychological difficulties, making it clear that the provision of services was not contingent upon their decision to participate. Interested outpatients were referred to our Personality and Psychopathology Studies Laboratory for personality evaluation; all of the clinical participants who came for evaluation (n = 211) agreed to participate and gave informed consent when details of the research were provided to them. Nonclinical participants were self-referred, and all of them (n = 74) agreed to participate once all details were given to them, and all gave informed consent. Exclusion criteria included severe brain damage (n = 1, from the outpatient subgroup), substance abuse or dependence (n = 0), or acute psychotic symptoms impeding a psychological evaluation (n = 0). We also dropped another participant of the outpatient subgroup from subsequent analyzes because of repeated lies and obvious deception in the evaluation process.

Thus, 283 participants were finally included in our analyzes. All participants (153 males, 130 females) were white and French-speaking. The age ranged between 18 and 65 years old (M = 35.4, SD = 10.6). As for their occupation, 36.8% worked full-time or part-time, 37.1% were students, 17.4% were on welfare, and 8.7% did housekeeping or were retired. Participants had a mean of 14.1 years of education (SD = 2.7) and a median annual personal income of $22,884 Canadian dollars (M = $15,321, SD = $10,951).

All 283 participants were evaluated for axis I and axis II psychopathology by licensed psychologists or graduate students under supervision. All interviews were videotaped and the provisional diagnoses were confirmed through discussion with at least one other psychologist. DSM-IV evaluation (First et al., 1997b; First et al., 1997a) revealed that 70.7% of the total sample (n = 200) presented with at least 1 axis I or axis II disorder. 68.6% of the total sample (n = 194) had an axis I disorder; 39.2% of the total sample (n = 111) presented with a mood disorder, 23.3% (n = 66) with an anxiety disorder, 3.9% (n = 11) with an actual or past eating disorder, 27.2% (n = 77) with a sexual disorder, 6.4% (n = 18) had a history of psychotic disorder, and 24.0% (n = 68) had a history of substance dependence (total exceeds 68.6% because of comorbidity). Half the participants (51.6% from the total sample, n = 146) suffered from a personality disorder: 12.7% from the total sample (n = 36) had a cluster A disorder, 36.4% (n = 103) a cluster B disorder, and 30.4% (n = 86) a cluster C personality disorder (total exceeds 51.6% because of comorbidity). All 283 participants were evaluated for PO. According to PODF evaluation, 12 patients (4.2%) were diagnosed with a PPO, 184 (65.0%) with a BPO, and 87 (30.7%) with a NPO.

Measures

Personality Organization

The PODF (Diguer et al., 2001) includes 21 scales covering the 4 dimensions of Kernberg’s model, which are described in Table 1. In the current study, it was scored on the basis of DSM-IV evaluations, relationship narratives gathered using Luborsky’s Relationship Anecdotes Paradigm interview method (Luborsky, 1998), and self- and object descriptions gathered using Blatt’s method (Blatt et al., 1993; Blatt et al., 1992). A group of 7 raters, who were psychodynamically oriented licensed psychologists, scored the revised PODF. All 7 raters had been trained for PODF scoring using the procedure described in the scoring manual, and were blind as to the identity of the participants.

PO Evaluation Gathered in Psychotherapy Files

We wished to examine psychotherapy files of participants who were in treatment (n = 209) for concurrent validity evaluation (see below). These files included psychological reports and process notes from their therapists. Seventy of the 209 participants who were in psychotherapy gave informed consent and allowed us to access
Mature defenses and SD were unaware of any information pertaining to the participants. Licensed psychologists scored the HSRS for 103 participants; they (ICC is well established (Luborsky, 1962, 1975). The French translation it would quickly result in the patient’s death; Luborsky, 1975). A score of 0 is attributed for the worst mental condition (i.e., if unattended, it would quickly result in the patient’s death; Luborsky, 1975). Seven subscales create the global score. The reliability of the HSRS is well established (Luborsky, 1962, 1975). The French translation used in the current study has shown validity and interrater reliability (ICC = 0.78) similar to the original form (Daoust et al., 2004). Two licensed psychologists scored the HSRS for 103 participants; they were unaware of any information pertaining to the participants. These judges were different from those who scored the PODF. For these 103 participants, HSRS ranged from 30 to 95 with \( M = 70.37 \) and \( SD = 17.27 \). HSRS interrater reliability was calculated on 58 (56.3\%) of these 103 participants, and yielded an ICC of 0.82.

We also wished to look at the correlations between PODF and a specific measure of PS. Only considering, for each participant, the main DSM diagnosis as a measure of PS appeared problematic for various reasons. First, it would constitute a circular argument, given that some DSM diagnoses (for example, psychotic disorders) have a direct impact on the PODF scores. Moreover, given the complexity of DSM diagnoses, the relatively low representation of some disorders and the high prevalence of comorbidity in our sample, it was difficult to produce meaningful and sound comparisons. To overcome these problems, we computed the PS score (Diguer et al., 2004; Hébert et al., 2003), which consists in a composite score that includes all major DSM-IV axes I and II disorders. Each DSM disorder is given a weight (ranging from 0.05 to 0.3) according to the degree of social dysfunction associated with it, as well as the effects these disorders may have on the individual’s close relationships. Weights are additive; therefore, the PS score reflects the psychosocial impairment associated with the summation of all axis I and II disorders of an individual. The weights were determined consensually by experienced clinicians according to empirical and clinical literatures. For axis II, an important consideration was given to Kernberg’s axis of severity for personality disorders (Kernberg and Caligor, 2005). Even though these weights were not derived empirically, the PS scale parallels closely recent empirical works on functional impairment (Skodol et al., 2005) and quality of life (Cramer et al., 2006). Axis I disorders and (weights) are as follows: adjustment disorders (0.05), dysthymia, cyclothymia, sexual disorders, and anxiety disorders (0.1), major depressive disorder, bipolar disorder, substance abuse, hypochondriasis, eating disorders, and psychotic disorders (0.2). For axis II disorders, dependent, avoidant, obsessive–compulsive, passive-aggressive, depressive, schizoid, and histrionic personality disorders are given a weight of 0.1; borderline, narcissistic, schizotypal, and paranoid personality disorders are given a weight of 0.2; antisocial personality disorder is given a weight of 0.3 (e.g. an individual presenting with comorbid major depressive disorder, alcohol abuse, borderline personality disorder, and histrionic personality disorder would be given a PS score of: \( 0.2 + 0.2 + 0.2 + 0.1 = 0.7 \)).

The correlations between PODF and measures of mental health and PS should be moderate, since the focus of Kernberg’s model is not on psychological well-being or psychiatric symptoms, but rather on underlying characteristics of psychological functioning (defenses, identity, ORs), which influence adaptation, and from which symptoms and conflicts with the environment may ultimately stem. Further, previous studies have also already reported moderate correlations (around 0.50) between PO and mental health measures (Daoust, 2003; Hébert et al., 2005; Laverdière et al., 2007; Sundin and Armelius, 1998). Very high or very low correlations, in the current study, would in fact indicate a low validity for the PODF.

RESULTS

Interrater Reliability of the PODF

PODF interrater reliability was estimated on 80 (28.3\%) randomly selected participants. Forty-three participants were scored by 3 raters, and 37 other participants were scored by 4 other raters. ICCs type (2,1), or 2-way random effects, were used to calculate reliability (Shrout and Fleiss, 1979).

ICCs coefficients for items and dimensions of the PODF are presented in Table 2. The mean ICCs (weighted according to \( n \)) indicated, according to the criteria set by Cicchetti and Sparrow (1981), good to excellent reliability for identity items, fair to good reliability for primitive defenses items, poor to fair reliability for mature defenses items, and fair to excellent reliability for reality testing items. The average ICC for all 21 items was 0.63, with a median of 0.64, which indicates good reliability. Dimensional and GPO scores had excellent reliability, except the mature defenses dimension that showed good reliability (0.68). ICCs were not computed when items had a very rare occurrence (i.e., present in less than 10\% of cases).

Validity of the PODF

Construct Validity

An Exploratory Factor Analysis (EFA) was conducted on the entire sample (\( N = 283 \)) to examine if the factor structure underlying the data reflects Kernberg’s model. EFA allows us to identify the latent dimensions represented in variables for which we have yet little psychometric knowledge (Tabachnick and Fidell, 2001), which is the case with this new version of the PODF. Factor solutions were examined on the basis of eigenvalues higher than 1.00, scree tests plots examination, parallel analysis (Horn, 1965; O’Connor, 2000), identification of conceptually meaningful factors, and factor loadings higher than 0.35.

No squared multiple correlations were close to 1, which indicates the absence of multicollinearity or singularity (Tabachnick and Fidell, 2001). Kaiser’s Measure of Sampling Adequacy was 0.95, which suggested the presence of factors among the items (Hair et al., 1995). A principal axis factoring method, which does not assume normal item distribution (Floyd and Widaman, 1995), was used for extraction. Eigenvalue-greater-than-one rule, scree plot examination, and parallel analysis using O’Connor’s procedure for Statistical Analysis System (SAS) (2000) all converged toward a 2-factor solution (Table 3). A promax oblique rotation was per-
formed, allowing factors to correlate. Factors were labeled “borderline-neurotic continuum” and psychotic, and explained 51.3% and 26.3% of scores variance. The correlation between the 2 factors was $r = -0.51$. Even though the 2-factor solution appeared clear and interpretable, we nonetheless elected to run a forced 3-factor EFA, which would allow us to verify if the borderline-neurotic continuum factor from the 2-factor solution would be subdivided into separate borderline and “neurotic” factors. This decision was also supported by the presence of 32 residual correlations (of the total 210) higher than 0.05, which suggest that some other factors might be present. However, the third factor yielded by the forced 3-factor EFA had a low eigenvalue (0.72) and was hardly interpretable, leading us to interpret the 2-factor solution as the final model. Given the high number of items and the small number of participants in the PPO group ($n = 12$), we could not compare the factorial structure between PO groups.

Concurrent Validity of the PODF

As aforementioned, concurrent validity was assessed by comparing PODF scores with therapists’ PO diagnoses as they were reported in psychotherapy files of participants who were in treatment; relevant information was present in 64 of the 70 files we were able to access. ICCs were calculated to estimate the agreement between PODF and therapists’ PO diagnoses. For the identity dimension, the ICC between therapists’ diagnoses, and PODF was 0.66, which represents a good agreement according to the criteria set by Cicchetti and Sparrow (1981). For the defense mechanisms dimension, an ICC of 0.66 was also obtained. For the reality testing dimension, the ICC of 0.56 indicated a moderate agreement. The OR dimension showed an excellent agreement, with an ICC of 0.82. For the GPO, the ICC was 0.72, which indicated a good agreement.

Convergent Validity With Mental Health and PS

We first examined correlations between the PODF and a well-validated measure of mental health, the HSRS (Luborsky, 1962, 1975) ($n = 103$). Correlations between HSRS global score and PODF dimensions and GPO were as follows: $0.67 (p < 0.0001)$ for identity, $-0.71 (p < 0.0001)$ for primitive defenses, $0.40 (p < 0.0001)$ for mature defenses, $-0.41 (p < 0.0001)$ for reality testing, $0.58 (p < 0.0001)$ for ORs, and $0.59 (p < 0.0001)$ for GPO. Regression analysis between HSRS and PODF dimensions yielded a $R^2 = 0.56 (F = 27.41; p < 0.0001)$, which corresponds to a very large effect size ($f^2 = 1.27$; Cohen, 1988).

We then computed correlations between PODF and PS scores (Diguer et al., 2004; Hébert et al., 2003). For all 283 participants, PS ranged from 0 to 1.7 with $M = 0.32$ and $SD = 0.34$. Correlations between PS and PODF dimensions and GPO were as follows: $-0.48 (p < 0.0001)$ for identity, $0.53 (p < 0.0001)$ for primitive defenses, $-0.44 (p < 0.0001)$ for mature defenses, $0.16 (p < 0.05)$ for reality testing, $-0.33 (p < 0.0001)$ for ORs, and $-0.36 (p < 0.0001)$ for GPO. Regression analysis between PS score and PODF dimensions yielded a $R^2 = 0.28 (F = 15.05; p < 0.0001)$, which corresponds to a large effect size ($f^2 = 0.39$; Cohen, 1988). The correlation between
PS and HSRS was moderate \((r = -0.59, p < 0.0001)\). In sum, as predicted, moderate to high correlations were observed between PODF and mental health, while moderate correlations were observed between PODF and PS.

**Other Validity Tests**

**Internal Consistency**

Cronbach \(\alpha\) coefficients were computed on the dimensions to assess the internal consistency of the measure \((N = 283)\). Although internal consistency is not a direct measure of validity, test constructors agree that if a test is to be valid, then internal consistency must be high (Kline, 2000, p. 11). Estimates of dimensions’ internal consistency (Cronbach’s \(\alpha\)) were in the moderate to excellent range, according to the criteria set by Cicchetti (1994): 0.97 for identity, 0.88 for primitive defenses, 0.75 for mature defenses, and 0.78 for reality testing.

**Internal Correlations**

Correlations between the dimensions and the GPO were also examined to estimate POFD internal correlations \((N = 283)\). The presence of internal correlations is necessary, although not sufficient, for test validity (Kline, 2000). Correlations between GPO and the POFD dimensions are presented in Table 4. They ranged from 0.38 to 0.88, with a mean of 0.67, and a median of 0.69 (in absolute values). Correlations between GPO and dimensional scores all show were strong, except for reality testing, which was moderate.

**DISCUSSION**

The purpose of this study was to examine whether the revised version of the POFD can be scored with adequate interrater reliability, and whether the instrument shows adequate construct validity, concurrent validity, and convergent validity. In terms of interrater reliability, the GPO and the dimensional scores all lie within the excellent range according to the criteria set by Cicchetti and Sparrow (1981), except the mature defenses dimension which lies in the good range. The replacement of dichotomous items by scales in the current version of the POFD did not affect reliability, as the estimates found for the revised version were similar to those reported for the first version of the instrument (Hébert et al., 2003).

When items are examined individually, they display, in general, good reliability estimates, with some items lying in the excellent range, especially for the identity dimension. Mature defenses items had the lowest reliability; however, such reliability estimates compare advantageously with those reported by Perry and Ianni (1998) in their review of observer-rated measures of defense mechanisms. The POFD indeed yields comparable, and often superior reliability estimates than those reported for clinical data and interrater reliability methods, such as the Vaillant’s Clinical Vignette Method (e.g., Vaillant, 1971), the Defense Mechanism Rating Scales (Perry, 1990), and the Inventory of Defense-Related Behaviors (Bauer and Rockland, 1995). It can be hypothesized that by their very own nature, mature defenses require a higher level of inference for their scoring. While primitive defenses generally present clear manifestations, since they are the result of very basic cognitive operations, mature defenses have a higher level of elaboration and allow a more flexible and harmonious adaptation to internal and external reality, which may require more inference on the part of the raters. We should finally keep in mind, in interpreting the lower (poor to fair) ICC figures, that it is not clear the extent to which these low ICCs may be artificial, given that they may be related to the extreme constriction of range of values upon which they are based. Scores of 0 (absence) and 1 (rare) on a 4-point scale were overendorsed for 4 of the 5 mature defenses for which ICC figures fell in the poor to fair range, leading to a severely skewed data distribution and a probable overestimation of rater error. Indeed, 78.5% of ratings were 0 or 1 for mature idealization; 83.0% for mature devaluation; 90.5% for isolation; and 79.2% for denegation or suppression.

The EFA yields a clear 2-factor structure, with strong loadings and only 1 item scoring on both factors. The solution seems to be an accurate reflection of Kernberg’s model, with the first factor featuring a borderline-neurotic continuum, and the second one featuring a psychotic factor. The borderline-neurotic continuum factor regroups the 6 identity items, the OR item, the 5 primitive defenses, and the 5 mature defenses. This continuum extending from the low-level BPO to the NPO corresponds to the theoretical continuum of severity and psychological functioning proposed by Kernberg in his model. The second factor regroups the 4 reality testing items and the OR item. Consequently, this factor was labeled psychotic. The composition of this factor appears to be closely aligned with Kernberg’s formulations on psychosis and reality testing. The items, evaluation of social norms and inappropriateness, have the strongest loadings, followed by hallucinations and self-other differentiation. For Kernberg, it is not the presence of hallucinations or delusions per se that is the strongest marker of loss of reality testing, given that egodystonic hallucinations, acute paranoid ideation, or severe dissociation can be found in BPO individuals. However, BPO individuals experience these breaches in reality testing as bizarre, deeply frightening, or unusual, and they have some degree of introspection and insight regarding these breaches (Kernberg, 1984). Therefore, according to Kernberg, what really allows to differentiate BPO from PPO with respect to the lack of reality testing and psychotic experiences is that the former, contrary to the latter, maintains “the capacity to identify with ordinary social criteria of reality as presented to them in tactful confrontations” (Clarkin et al., 2006, p. 19), which is

| TABLE 4. Correlations Between POFD Dimensions and GPO \((N = 283)\) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | Identity        | Primitive Defenses | Mature Defenses | Reality Testing | Object Relations |
| Primitive defenses | −0.88\(a\)      | —                | —               | —               | —               |
| Mature defenses   | 0.83\(a\)       | −0.68\(b\)        | —               | —               | —               |
| Reality testing   | −0.48\(a\)      | 0.41\(c\)         | −0.38\(a\)      | —               | —               |
| OR                | 0.72\(a\)       | −0.64\(b\)        | 0.66\(b\)       | −0.69\(b\)      | —               |
| GPO               | 0.86\(a\)       | −0.77\(a\)        | 0.76\(a\)       | −0.51\(b\)      | 0.81\(a\)       |

\(a\)Very large effect size (Cohen, 1988).
\(b\)Indicates a large effect size.
\(c\)Indicates a moderate effect size.
All correlations significant at \(p < 0.0001\).
mainly captured by the evaluation of social norms and the inappropriateness items of the PODF.

A recent investigation using canonical correlation between PODF and NEO Five Factor Inventory (NEO-FFI) factors also suggested that a borderline-neurotic and a psychotic factor may underlie PODF items (Laverdière et al., 2007). The study identified 2 significant canonical functions. The first one indicates that the more a person is situated on the borderline segment of a neurotic-borderline continuum, the more likely he or she will present NEO emotional instability, poor interpersonal functioning as well as unreliability or disorganization. The second canonical correlation shows that psychotic functioning or disturbances were associated with emotional instability, disengagement from the social world, and shunted interest.

The PODF’s factor structure is also quite similar to the IPO’s (Lenzenweger et al., 2001), which featured a primitive defenses—identity diffusion factor and a reality testing factor (although the IPO did not include identity integration nor mature defenses items). Lenzenweger and colleagues observed that the IPO internal structure was coherent with Kernberg’s formulations of a well-demarcated reality testing process, separated from the primitive defenses and the identity processes. This also reinforces the idea that psychotic disorders may have a particular status in the realm of psychopathology, and may differ qualitatively from other disorders, mainly because of their rupture with consensual reality. Westen (1990) also doubts that psychotic disorders can be included on the same developmental continuum as borderline and neurotic disorders. A demarcation between psychotic disturbances and personality pathology has also been suggested recently by the Psychodynamic Diagnostic Manual Task Force (2006, p. 26).

Our factor solution was very likely impacted by the correlations between PODF dimensions. These intercorrelations are in line with Kernberg’s theoretical formulations on PO. Kernberg (1984; Kernberg and Caligor, 2005) has discussed at length the close association between defensive operations and identity formation. For instance, splitting and its derivatives (such as primitive devaluation and omnipotence) lead to an incapacity to integrate contradictory representations of self and of others, hinder empathy in the sense that they interfere with the capacity to assess other people’s behavior and motivations in depth, and also interfere with a comprehensive integration of one’s past and present. High correlations between PO dimensions were also reported by Kernberg’s own research group; indeed, Lenzenweger et al. (2001) observed for the IPO correlations of 0.82 between identity diffusion and primitive defenses, of 0.62 between identity diffusion and reality testing, and of 0.65 between primitive defenses and reality testing. Correlations reported for the STIPO (Stern et al., 2008) were the following: 0.74 between identity and primitive defenses, 0.48 between identity and reality testing, 0.72 between identity and ORs, 0.65 between primitive defenses and reality testing, 0.58 between primitive defenses and ORs, and 0.49 between reality testing and ORs.

Given that the first version of the PODF did not include items on mature defenses, we must be cautious when comparing our factorial solution with Hébert et al.’s (2003). However, it seems that the 2 solutions are still quite similar, considering that Hébert et al.’s 2-factor solution consisted in a borderline and a psychotic factor. Interestingly, the borderline factor of the first version also suggested an association between identity diffusion and primitive defenses, while the psychotic factor underlined an association between reality testing and ORs, which is consistent with the model.

ICC between PODF scores and therapists’ diagnoses ranged from moderate to excellent. This shows good concurrent validity for the PODF. The moderate ICC for the reality testing dimension can probably be attributed to limitations in the material used for scoring the PODF Evaluation of social norms and Inappropriateness items. Clinicians dispose of a wider range of observations to evaluate these aspects: they have access to nonverbal communication, and have the possibility to confront patients on their odd and strange behaviors, thoughts, and affects. The patient’s capacity to be empathic with the therapist’s perceptions of these abnormalities (Kernberg, 1984) is also more easily assessed by clinical interviews.

Relations between PODF and HSRS are moderate to strong for all dimensions, and regression analysis yielded a very large effect size. These results are comparable with those from earlier studies (Daoust, 2003; Laverdière et al., 2007; Sundin and Armelius, 1998) that showed that PO and psychological health are distinct but related constructs. Kernberg (Kernberg and Caligor, 2005) postulates a distribution of PO along an axis of severity (from PPO to NPO), and our results reflect this assumption. Correlations between PODF and PS were moderate, lower than correlations between PODF and HSRS. This result suggests that personality functioning, as captured by POD evaluation, cannot be equated with DSM evaluation of personality pathology and syndrome disorders. Indeed, in many instances, individuals with severe PO pathology may report few, if any, psychological symptoms; BPO individuals may also report diffuse and quite debilitating symptoms (such as chronic anxiety, bizarre somatic and paranoid complaints, dissociative reactions, etc.; Kernberg, 1984) that do not fit well into DSM categories. The relationship between PO and symptomatology is likely to be complex (e.g., Westen et al., 2006) and warrants further studies. The highest correlation between PODF dimensions, HSRS, and PS pertains to primitive defenses, as observed in a previous study (Laverdière et al., 2007). This is not surprising since primitive defenses are very costly in terms of adaptive capacities, impoverishing self- and object representations, hindering integration of emotional impact of behaviors, while inducing severe relational difficulties. Kernberg (1984) observed that primitive defenses protect from intrapsychic conflicts, but at the cost of weakening ego functioning, thereby reducing one’s adaptive effectiveness and flexibility in life in general. A clear and significant correlation between severity of psychopathology and maladaptiveness of defenses has also been pointed out by Bond (2004) in a review of empirical studies pertaining to the relations between defense mechanisms and psychopathology.

Our sample includes outpatients of psychiatric and psychological services, as well as participants drawn from the nonclinical population to cover the continuum ranging from severely impaired to highly functioning psychological conditions. This is consistent with the goals of this study and offers good generalizability. However, this generalizability has some limitations. First, only 4.2% of the participants were in the PPO group. In future research, samples should include a larger representation of PPO participants. The inclusion of more participants from inpatient settings could also greatly enhance the interpretability and the utility of PODF research. Moreover, a better balance between outpatients (74.0%) and nonclinical samples (26.0%) might be in order. Also, the PODF was developed from a Western perspective; our study also included only white participants. Therefore, in its present form, its applicability to other cultural groups remains to be demonstrated.

The next step in the development of the PODF will be to establish PODF psychometric norms (such as means, standard deviations, and cutoffs) in the nonclinical and clinical populations; this will be the object of a future study that will require a sample that better represents the nonclinical and clinical populations in terms of characteristics such as ethnicity, age groups, psychological condition, etc. Given that measures seeking to evaluate complex issues such as defenses and OR are notorious for difficulties in achieving interrater reliability, another step in PODF validation will be to
examine its properties when used in different settings and by other research groups.

CONCLUSION

The development of a valid and reliable PO measure was warranted given the high clinical relevance of this concept, especially in the context of the development of psychological treatments directly drawing from Kernberg’s PO theorizations (Caligor et al., 2007; Clarkin et al., 1999, 2006), and considering the limitations of existing measures for this concept. We believe that an instrument such as the PODF should appeal to professionals interested in the assessment, diagnosis, and treatment of personality disorders, beyond the realm of psychodynamic–psychoanalytic practice. As aforementioned, it is highly relevant to current discussions on the nature of personality and personality disorders (categorical vs. dimensional, pathology vs. normalcy, etc.). It also measures personality pathology dimensions that are receiving increased attention as core personality disorders features, such as identity diffusion. For instance, Bender and Skodol (2007) have recently suggested that borderline personality pathology emanates from disturbances in self- and other representations, and that such hypothesis was present in theories across a wide theoretical spectrum, including psychodynamic and interpersonal, but also cognitive-behavioral and trait models.

In the light of our results, the revised PODF appears to be a very promising alternative to existing PO measures for clinical and research purposes. The revised PODF possesses quite satisfactory psychometric properties, and has some decisive advantages over its predecessor, being closer to and more consistent with Kernberg’s “hybrid” dimensional–categorical personality model and allowing for a more precise and clinically useful description of participants. The PODF has a great clinical potential, for it provides profiles of PO items and dimensions that can help case formulation and treatment planning, monitoring of patients’ progress in therapy, and evaluation of structural change as a result of treatment. Further, the PODF has shown promising results as a research instrument, proving to be quite useful in a wide variety of studies pertaining to mental health, self- and object representations, transference, and in the study of various clinical and nonclinical groups (Diguer et al., 2004; Diguer et al., 2008; Gamache et al., 2005; Gamache et al., 2007; Hébert et al., 2005; Larochelle et al., 2009; Laverdière et al., 2007; Rousseau, 2004).

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