



Assessing Level of Personality Organization With the Psychodiagnostic Chart: A Validity Study

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ABSTRACT

Heterogeneity within diagnostic types and comorbidity across diagnostic groups render a specific personality disorder anything but specific, leading researchers and clinicians to increasingly focus on the general severity of personality pathology. Personality pathology severity is reflected in one's level of personality organization (LPO) and research has demonstrated that LPO is a significant predictor of treatment response. This investigation examined the reliability and validity of the Psychodiagnostic Chart (PDC) in assessing the LPO dimension of the *Psychodynamic Diagnostic Manual (PDM; PDM Task Force, 2006)*. Among a sample of 88 urban-dwelling women seeking primary medical care, the LPO dimension of the PDC received fair to good interrater reliability among 6 psychodynamic psychologists. Convergent validity was demonstrated with contrast analysis and individual correlations that yielded statistically significant associations between LPO scores and conceptually related psychodynamic variables (e.g., defensive functioning, object relations) and self-reported personality pathology scores. Support for discriminant validity was limited by the modest power associated with the sample size. Exploratory analyses examining LPO scores and measures of physical health and intimate partner violence were conducted. Our results supported the reliability, validity, and practical use of the LPO dimension of the PDC.

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Personality organization (PO) refers to a set of enduring, mostly unconscious psychological structures that dynamically organize mental processes and content to promote coherency (Gamache et al., 2009). Conceptually independent from specific personality traits, applicable to both normal and disrupted personality development, and both categorical and dimensional in nature, PO has received renewed interest as a central concept in contemporary psychodynamic conceptualization and treatment (Caligor & Clarkin, 2010; Clarkin, Yeomans, & Kernberg, 2006; Eurelings-Bontekoe, Luyten, Remijsen, & Koelen, 2010; Gamache et al., 2009; Koelen et al., 2012; Laverdière et al., 2007; McWilliams, 1994; Smits, Vermote, Claes, & Vertommen, 2009; Stern et al., 2010). This study examines the validity of the PO construct among a sample of urban-dwelling women using primary care.

Level of personality organization

Because PO is a latent construct, it can only be inferred from manifest indicators such as object relations, identity consolidation, reality testing, defense mechanisms, moral functioning, and personality rigidity (Bender, Morey, & Skodol, 2011; Blatt & Auerbach, 2003; Caligor & Clarkin, 2010; Fonagy & Target, 2006; Gamache et al., 2009; Hibbard, Porcerelli, Kamoo, Schwartz, & Abell, 2010; Kernberg, 1984, 2012). The cumulative degree of disturbance among these “primary manifestations of PO” (Koelen

et al., 2012, p. 356) comprise the level of personality organization (LPO). The LPO ranges from extremely disturbed (psychotic PO; PPO), through disturbed (borderline PO; BPO) to higher levels of functioning, including neurotic (neurotic PO; NPO) and normal personality functioning (Caligor & Clarkin 2010; Eurelings-Bontekoe, Onnink, Williams, & Snellen, 2008; Gamache et al., 2009). For example, PPO often communicates the presence of psychosis with a loss of reality testing, severe identity diffusion, and the use of primitive defenses such as denial, whereas NPO is characterized by some degree of conflict and distress but relatively solid identity integration, evidence of mature defenses, stable reality testing, some capacity for caring and intimate relationships, anxiety tolerance, impulse control, and effectiveness and creativity in work (for a helpful review, see Gamache et al., 2009).

Because LPO follows a developmental progression from severely undifferentiated and disorganized to mature, integrated, and differentiated, researchers agree that PO is related (but not identical) to the overall severity of personality pathology (e.g., see Bender et al., 2011). Bornstein (1998) stated, “The best predictor of the therapeutic outcome for personality disordered patients is severity, not type, of personality pathology” (p. 337). Indeed, a systematic review (Koelen et al., 2012) identified 18 studies suggesting that healthier initial LPO was associated with better treatment outcome even up to 3 years after treatment completion. The authors asserted that the strength of the association between PO and treatment outcome was

considerably greater than that between the therapeutic relationship and treatment outcome. Hopwood and colleagues (2011) found that the general severity of personality pathology was the single best predictor of prospectively assessed functional impairment in patients with personality disorder after a 10-year follow-up. When assessing personality pathology, the authors suggested differentiating severity and type of personality pathology because they each contributed uniquely to disturbances in different domains of functioning. The authors concluded that personality disorders might best be characterized by a generalized personality severity continuum with additional specification of stylistic elements. A proposal to emphasize the importance of a general severity axis in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed. [DSM-5]; American Psychiatric Association, 2013; Bender et al., 2011; Skodol et al., 2011) was expected to address existing diagnostic problems including limited coverage, poor reliability, and a lack of subtlety (Huprich & Greenberg, 2003; Luyten & Blatt, 2013; Psychodynamic Diagnostic Manual Task Force, 2006; Verheul, 2005). However, the proposed hybrid dimensional-categorical approach was rejected in favor of the existing categorical model (but was retained for further study in the emerging measures and models Section III).

Assessing personality organization

The majority of studies assessing PO rely on an observer to analyze content drawn from an interview or projective technique. For example, the Social Cognition and Object Relations Scales (SCORS; Stein, Hilsenroth, Slavin-Mulford, & Pinsker, 2011) can be calculated using content drawn from the Thematic Apperception Test (TAT; Murray, 1943) or Early Memory Procedure (Mayman, 1968), the Concept of the Object Scale (CORS; Blatt, Brenneis, Schimek, & Glick, 1976) can be applied to content drawn from the Rorschach, or the Quality of Object Relations Scale (QORS; Azim, Piper, Segal, Nixon, & Duncan, 1991) analyzes content drawn from a relationship-themed interview. Other assessment methods for determining PO include a self-report questionnaire that was later developed into a structured interview (Lenzenweger, Clarkin, Kernberg, & Foelsch, 2001; Stern et al., 2010). The focus of this investigation is on the newly developed Psychodiagnostic Chart (PDC) that corresponds to the *Psychodynamic Diagnostic Manual* (PDM; PDM Task Force, 2006).

Although the PDM garnered a positive reception (for a helpful review, see Lingardi, McWilliams, Bornstein, Gazzillo, & Gordon, 2015) and demonstrated clinical utility from practicing clinicians of various theoretical orientations, it is “in danger of being underutilized because it lacks easily usable assessment instruments” (Lingardi et al., 2015, p. 101). To that end, the PDC (Gordon & Bornstein, 2015) was recently constructed to serve as a clinician-friendly coding form that allows practitioners to combine DSM and *International Classification of Diseases* (ICD) diagnostic data with PDM-derived personality organization, overall mental functioning, and other salient psychological, cultural, and contextual variables. The PDC is both categorical and dimensional, flexible, and intentionally simplified and limited to three pages. It is intended to be used for diagnoses, treatment formulations, progress reports, outcome assessment, and further PDM empirical research.

Bornstein and Gordon (2012) assessed the utility of the PDC by surveying practitioners from various psychology listservs and Web sites after using the PDC with at least one client. With 50 surveys completed by practitioners from a variety of theoretical orientations, 68% rated the LPO section as “helpful to very helpful,” 58% rated the mental functioning section as “helpful to very helpful,” and 44% rated the dominant personality patterns or disorders section as “helpful to very helpful.” In contrast, only 18% of the practitioners rated DSM Global Assessment of Functioning (GAF) scores as “helpful to very helpful,” and just 14% rated ICD or DSM symptoms as “helpful to very helpful.”

PDC reliability and construct validity was examined in a survey of 38 psychologists from the Pennsylvania Psychological Association asked to complete PDCs on their last 10 psychotherapy patients, disability clients, or forensic clients (Gordon & Stoffey, 2014). Of the 38 psychologists, 15 sent in 98 completed PDCs. Two-week test-retest reliability among the 73 psychologists who submitted ratings that were gathered for overall personality organization was .92 and ranged from .69 to .90 for the associated seven component scales, .89 for overall severity of personality disorder, .77 to .89 for the 9 mental functioning scores, and .87 for severity of symptoms. To assess the construct validity of the PDC, the authors compared PDC scores to preselected scales on the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), Karolinska Psychodynamic Profile (KAPP; Weinryb, Rössel, & Asberg, 1991), and Operationalized Psychodynamic Diagnosis (OPD; Dahlbender, Rudolf, & OPD Task Force, 2006; Zimmermann et al., 2012). Overall, the authors found “very good ... construct validity for the operationalized PDM guide, the PDC” (Gordon & Stoffey, 2014, p. 12). For example, the PDC’s overall severity of personality organization scale had evidence of concurrent validity when compared with KAPP’s LPO and the OPD Level of Structural Integration global score. The MMPI-2 scales of Schizophrenia (Sc), Hysteria (Hy) and Ego Strength (Es) corresponded with the distinct categorical components of psychotic, borderline, and neurotic LPO, supportive of the instrument’s construct validity.

Personality and physical health

Although previous studies have not explicitly examined the link between LPO and physical health, there are a number of investigations that have considered how other personality-related constructs related to LPO (e.g., defense mechanisms, object relations, attachment style, personality traits, and personality disorders) are related to physical health. First, research has demonstrated an association between defense mechanisms and physical health (Flannery & Perry, 1990; Malone, Cohen, Liu, Vaillant, & Waldinger, 2013; Olff, Brosschot, & Godaert, 1993; Soldz & Vaillant, 1998; Vaillant, 1993). Albuquerque and colleagues (2011) found that patients with chronic obstructive pulmonary disorder were more likely than healthy controls to have immature and neurotic defenses and that immature defenses were related to lower health-related quality of life and greater perceived severity of symptoms. In a longitudinal study of defense mechanisms and physical health in men from lower

socioeconomic strata, Vaillant (2000) found that immature defenses as young adults (age 20–47) predicted objectively assessed chronic and irreversible health problems from age 30 to 60 (Vaillant, 1993). Maturity of defenses in midlife (prior to age 47) predicted lower self-reported level of physical disability at age 65 (Vaillant, 2000), and more adaptive midlife defense mechanisms (coded from narratives and behavioral vignettes rather than from self-report) predicted better objective late-life health outcomes based on medical records (Malone et al., 2013).

Object relations has also been considered as influencing physical health. In Bram and colleagues' (1999) archival study, weak support was found for correlations in adulthood between TAT SCORS ratings and self-reported measures of physical health. Bram (2014) found a small significant correlation between healthier scores on the affective component of the SCORS and fewer self-reported physical symptoms, with a larger association among only female participants. This finding was moderated by investment in moral values as assessed on the SCORS, with greater maturity in moral sense being associated with a reduced report of somatic symptoms. The strongest correlations with self-reported physical symptoms involved the self-esteem and moral values scales of the SCORS, suggesting individuals with poorer self-esteem might be more susceptible to illness or individuals who suffer illness will feel worse about themselves.

Specific personality traits, often measured within the Five-Factor Model framework, have been shown to have important links with physical health. Biologically, heightened baseline neuroticism is believed to cause “wear and tear on the physiological system, degrading its integrity and leaving the organism more vulnerable to disease and illness conditions” (Charles, Gatz, Kato, & Pedersen, 2008, p. 369). Studies suggest positive correlations between neuroticism and self-reported pain severity, physical symptoms, and disease presence, as well as arthritis, heart disease, cardiovascular disease, ulcers, tension and migraine headaches, irritable bowel syndrome, chronic fatigue, and chronic pain (Cao, Zhang, Wang, Wang, & Wang, 2002; Charles & Almeida, 2006; Dersh, Polatin, & Gatchel, 2002; Huber & Henrich, 2003; Ramirez-Maestre, Martinez, & Zarazaga, 2004; Stanwyck & Anson, 1986; Sullivan, Kovalenko, York, Prescott, & Kendler, 2003). Although not identical to LPO, general personality pathology has demonstrated a negative impact on an individual's physical health (Huprich & Frisch, 2004; Jackson & Burgess, 2002). Moran and colleagues (2007) found that individuals with any personality disorder are at heightened risk for the development of cardiovascular disease, whereas a community-based longitudinal study (Chen et al., 2009) suggested that long-term physical health outcomes in adulthood are more strongly associated with adolescent personality disorders than with Axis I disorders.

Suggested mechanisms through which personality negatively affects an individual's physical health include the neglect of routine preventative care or avoidance of treatment for existing medical conditions, self-destructive behaviors that directly affect physical health such as substance abuse and suicide attempts or nonsuicidal self-injury, or as is the case with dependent personality disorder, the exposure to abusive partners who

pose a threat to their physical safety (Andreoli et al., 1989; Boehnert & Popkin, 1986; Compton et al., 2005).

This study

This study was carried out to assess the validity of the LPO dimension of the *PDM* in a sample of urban-dwelling women using primary care. We assessed the following aspects of reliability and validity: (a) Interrater reliability was assessed using three pairs of coders with each pair coding approximately 20 videotaped interviews; (b) construct validity was assessed by correlating LPO ratings with psychodynamic variables conceptually related to LPO (object relations and defense mechanisms) and self-report personality pathology scores; and (c) discriminant validity was assessed by correlating LPO ratings with symptom measures (depression and anxiety) and a measure of interview length. We hypothesize that the aggregate interrater reliability of the LPO dimension will at least reach the “fair” range (an uncorrected *ICC* [2, 1] = .40–.59) according to Shrout and Fleiss (1979).

Method

Participants

Participants were 88 adult urban women who sought treatment at a university-based primary care clinic. Their ages ranged from 18 to 55, with a mean of 35. Regarding demographics, 90% were African American; 19% were married or living with partner and 81% were single, divorced, or widowed; 94% had family incomes under \$30,000 per year; 53% had a high school education or less; and 42% were employed on at least a part-time basis. All participants had Medicaid or were Medicaid-eligible.

Procedures

Women were recruited in the waiting room of an urban family medicine clinic in Detroit, Michigan. In the original study (Porcerelli, Cogan, Markova, Murdoch, & Porcerelli, 2010), 161 consecutive women were asked to participate in a women's health study. A total of 143 agreed to participate and 110 completed all study measures and received an \$80 honorarium. A psychologist and two doctoral students obtained consent from participants and administered all study measures in addition to a brief interview.

The interview consisted of an early memory procedure (earliest, next earliest, earliest of mother, father, happiest, saddest, school, being fed, being warm and snug, and of a special object); a description of the participant's mother, father, and significant other; and stories associated with four TAT (Murray, 1943) cards (2, 3 BM, 4, and 5). Of the original participants, 88 of those who had interviews of at least 15 min in length were included in this study ($M = 24$ min). The study was approved by both the Michigan Department of Community Health and Wayne State University Institutional Review Board.

The interviews were coded by six psychologists (four male, two female), with experience in using the *PDM*. One of the

psychologists also administered a small portion of the interviews. The psychologists included three White men, one Middle Eastern man, and two African American women. To ensure the ecological validity, no training in using the *PDM* or *PDC* was provided to any of the psychologists, but each psychologist was self-described as psychodynamically oriented with working familiarity with the *PDM*. Each psychologist was told that there is a new rating form, the *PDC*, that helps clinicians diagnose with the *PDM*, and no other information was provided or requested. Rating psychologists were instructed to watch the videotaped interviews and provide ratings with the *PDC* independently. For interrater agreement, three pairs of psychologists coded 21 interviews (blind to all study data except the participant's gender, ethnicity, and approximate age). Descriptions of parents and significant others from the interviews were independently coded with the Conceptual Level Object Relations Scale by two doctoral students from a clinical psychology program accredited by the American Psychological Association.

Measures

LPO was assessed using the *PDC* (Gordon & Bornstein, 2015), which operationalizes the *PDM* Adult section. Ratings are made along five areas of functioning: LPO, personality patterns or disorders, mental functioning, manifest symptoms or concerns, and cultural, contextual, and other relevant considerations. This study focused on LPO ratings. LPO includes seven dimensions (identity, object relations, affect tolerance, affect regulation, superego integration, reality testing, and ego resilience); each is rated on a 10-point scale ranging from 1 (*severely impaired*) to 10 (*healthy*). Ratings are then used to determine the overall LPO score, which itself is rated on a 10-point scale ranging from 1 to 3 (*psychotic*), 4 to 6 (*borderline*), 7 to 9 (*neurotic*), and 10 (*normal*). The overall LPO score was used for all analyses in this study because other *PDC* sections (e.g., personality patterns or disorders) would be unreliably assessed given the brevity of the interview, limited content, and absence of a general diagnostic psychodynamic interview. A McDonald's Omega coefficient of .89 was obtained for the seven LPO dimensions supporting the unidimensionality of the ratings. Higher LPO scores represent healthier personality functioning. In this study, interrater reliability (intraclass correlation [ICC], one-way random effect) of the LPO score was $ICC [1, 1] = .67$ (and $ICC [1, 1] = .80$ with correction for double coding) from a randomly drawn subsample ($N = 63$) of patients. Internal consistency of the LPO items that are used to determine the overall LPO (identity, object relations, affect tolerance, affect regulation, superego integration, reality testing, and ego resilience) was .92 (Cronbach's alpha).

Personality pathology was assessed using the Personality Assessment Screener (PAS; Morey, 1997), a 22-item self-report measure derived from the Personality Assessment Inventory (PAI; Morey, 1991). The PAS yields a total score and 10 subscale (element) scores: negative affect, acting out, health problems, psychotic features, social withdrawal, hostile control, suicidal thinking, alienation, alcohol problems, and anger control. The PAS subscales were derived from factor analysis. Patients indicate the extent to which each item is self-descriptive using a 4-point

scale ranging from 0 (*false*) to 3 (*very true*). Total scores range from 0 to 66 with a cut score of 19 being a positive screen. Adequate test-retest reliability of the PAS total score and subscales have been reported (Morey, 1997). Evidence of convergent and discriminant validity, comparing the PAS with several personality measures, is reported in the PAS manual and in Porcerelli, Kurtz, Cogan, Markova, and Mickens (2012). Total PAS scores were used for all analyses; higher scores indicate greater personality pathology.

Personality pathology was also assessed using the Personality Diagnostic Questionnaire, Fourth Edition (PDQ4+; Hyler, 1994), a 99-item yes-no self-report questionnaire. Items reflect the *DSM-IV* personality disorders criteria. The PDQ4+ is a modified version of the Personality Diagnostic Questionnaire-Revised (PDQ-R; Hyler & Rieder, 1987). For this study, the following scales were administered: antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and depressive. Reliability and validity of the PDQ4+ has not been extensively studied. However, the scale has demonstrated adequate test-retest reliability and convergent validity (Okada & Oltmanns, 2009), and has shown some promise as a screen for the presence or absence of personality disorder (Davis, Leese, & Taylor, 2001). For this study, PDQ4+ total scores were used for all analyses; higher scores indicate greater personality pathology.

Psychological symptoms were assessed using the Patient Health Questionnaire (PHQ; Spitzer, Kroenke, & Williams, 1999), a self-report measure that includes scales to assess the severity of depression and anxiety. Nine items are used to assess depression severity (past 2 weeks) on a 4-point scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Total scores range from 0 to 27 with a cut score of 10 for assessing moderately severe depression. Anxiety severity (past 4 weeks) is assessed on a seven-item 4-point scale ranging from 0 (*not at all*) to 2 (*more than half the days*). Total scores range from 0 to 14 with a cut score of 8 (moderate severity). The reliability and validity of the PHQ has been supported by primary care (Spitzer et al., 1999) and obstetric-gynecologic (Spitzer, Williams, Kroenke, Hornyak, & McMurray, 2000) clinic studies. For this study, total scores for depression and anxiety were used for all analyses; higher scores indicate greater symptom severity. Internal consistency (Cronbach's alpha) of the PHQ-9 ratings was .90.

Defenses were assessed with the *DSM-IV* Defensive Functioning Scale (DFS; American Psychiatric Association, 1994). The scale includes 31 defenses organized into seven levels of maturity: high adaptive (Level 7), mental inhibitions (Level 6), minor image-distorting (Level 5), disavowal (Level 4), major image-distorting (Level 3), action level (Level 2), and dysregulation (Level 1). The scale can be used to rate narrative material (e.g., intake interviews, therapy sessions, or semistructured interviews). Defenses are rated each time they occur in an interview. An overall defensive functioning (ODF) score can be calculated to represent an individual's level of defensive maturity. ODF is calculated by taking the total number of defenses within each of the levels and multiplying them by a weighted score (ranging from 7 to 1). The total scores from each level are summed and then divided by the total number of defenses resulting in a score ranging from 1 to 7. Higher scores indicate greater maturity and less psychopathology. The sum of all the weighted level scores is then divided by the total number of

defenses to obtain the ODF score. Perry (2001) indicated that scores below 5.60 are indicative of psychopathological functioning. The DFS defenses were coded from the early memory narratives and parental descriptions from the videotaped interviews. A doctoral student and the fourth author blindly rated 35 interviews to assess interrater reliability. Scoring discrepancies were discussed and a final agreed-on score was used for data analysis. The remaining interviews were scored by the fourth author. These ratings were originally reported in Porcerelli, Cogan, Kamoo, and Miller (2010) yielding an excellent ICC [2, 1] = .80.

Object representation was assessed using the Conceptual Level (CL) scale (Blatt, Chevron, Quinlan, Schaffer, & Wein, 1992). The CL scale assesses the structure of object representations from the perspective of cognitive-developmental and object relations theory. The scale is used to rate open-ended descriptions of parents and significant others; for this study, descriptions of mother, father, and a significant other of the patient's choosing were added to the end of the clinical interview. These descriptions were rated on a 9-point scale ranging from 1 (*developmentally immature*) to 9 (*mature*). Level 1 (sensorimotor-preoperational) representations reflect descriptions of parents' or others' activity in reference to basic gratification or frustration while the parent is not experienced as a having a separate identity from the respondent. Level 3 (concrete-perceptual) representations involve concrete, literal, and global descriptions of parents or others (i.e., physical attributes). Level 5 (external iconic) representations reflect part properties of the parents or others, in terms of their functional activities or attributes. Level 7 (internal iconic) representations involve part properties of thinking and feeling (i.e., internal states) rather than activities. Level 9 (conceptual) reflects the highest level of cognitive complexity through an integration of several prior levels with an appreciation of how others change over time. Scores of 2, 4, 6, and 8 are used when criteria for a particular level are not fully reached. Interrater reliability and validity of CL are reported in Stricker and Goen-Piels (2003) and Huprich, Auerbach, Porcerelli, and Bupp (2016). In this study, a separate set of raters (two doctoral students in a clinical psychology program accredited by the American Psychological Association) scored CL object representations and an excellent ICC [2, 1] = .82 was obtained.

The physical health habits, status, and utilization of participants (past year) was assessed using the positive health habits (14 items) and negative health habits (10 items) scales from the Multidimensional Health Profile (MHP-H; Karoly, Ruehlman, & Lanyon, 2005). Items are rated on 5-point scales ranging from 1 (*never*) to 5 (*daily*), and converted to *T* scores ($M = 50$, $SD = 10$). The items include eating habits, exercise, automobile safety, alcohol and tobacco use, sleep, and so on. Unhealthy levels of positive or negative health behaviors are defined by *T* scores of 60 and above. Separate *T* scores for positive and negative habits were calculated and used for all data analyses. Internal consistency for positive health habits and negative health habits were .88 and .82, respectively. Current health status (past 6 months) was assessed from a single 5-point item from the MHP-H scale, ranging from 1 (*poor*) to 5 (*excellent*). Health care utilization was assessed through emergency room visits, overnight hospitalizations, and outpatient medical visits (past year) with single items from the MHP-H. Patients reported the frequency of each type of visit on 6-point scales ranging from 0 (*0 visits*) to 5 (*5 or more*). Reliability and validity for health habits, health status, and utilization are reported in Ruehlman, Lanyon, and Karoly (1998) and Karoly et al. (2005).

Intimate partner violence was assessed from the 12-item Physical Assault scale from the Conflict Tactics Scale (CTS2; Straus, Hamby, & Boney-McCoy, 1996). The Physical Assault items range from minor (e.g., "Threw something at me that could hurt") to severe (e.g., "Choked me"). Responses range from 0 (*this has never happened*) to 6 (*more than 20 times in the past year*). The reliability and validity of the CTS2 are reported in Straus and colleagues (1996). Respondents indicate how often they experienced each act by their partners in the past year. Scores were converted to a 3-point (incidence) scale: 0 (*no partner-violence*), 1 (*minor*), and 2 (*severe*). Coefficient alpha for scores on the CTS2 Physical Assault scale was .91.

Results

Means, standard deviations, ranges, skewness, and kurtosis of all study variables are reported in Table 1. Interrater reliability for the seven LPO dimensions and for the overall LPO score are reported in Table 2. Interrater agreement for LPO dimensions and overall LPO score ranged from fair to good,

Table 1. Study variables.

	<i>M</i>	<i>SD</i>	Range	Skewness	Kurtosis
Level of personality organization	6.58	1.74	2–10	.16	.43
Overall defensive functioning	5.28	.54	4.1–6.4	.14	.41
Conceptual Level of Object Representations	4.50	1.10	2–7	.25	.36
Personality Assessment Screener	24.00	10.83	1–52	.55	.26
Personality Diagnostic Questionnaire	14.75	8.68	2–39	.90	.41
Depression	7.61	6.24	0–27	.81	.29
Anxiety	4.52	4.26	0–14	.60	.65
Positive health habits	53.80	11.44	19–82		.84
Negative health habits	53.55	13.37	31–100	1.07	1.36
Current health status	3.17	1.22	1–5	.41	.69
Outpatient visits (past year)	2.49	1.19	0–4	.61	.39
Hospital visit (past year)	0.54	(0.99)	0–4	1.77	2.06
Emergency room visits (past year)	1.27	1.20	0–4	.51	.87
Intimate partner abuse (past year)	.85	.89	0–2	.30	1.69
Length of interviews (minutes)	24.28	8.44	15–57	1.57	3.56

Note. Means for positive health habits and negative health habits are reported as *T* scores.

Table 2. Interrater reliability for level of personality organization.

	ICC [1, 1] ^a	95% CI	Level of agreement ^b
Identity	.61	[.44, .74]	Good
Object relations	.61	[.43, .74]	Good
Affect tolerance	.49	[.28, .65]	Fair
Affect regulation	.44	[.23, .62]	Fair
Superego integration	.51	[.31, .67]	Fair
Reality testing	.56	[.38, .71]	Fair
Ego resilience	.53	[.33, .68]	Fair
Level of personality organization	.67	[.52, .79]	Good

^aIntraclass correlation coefficient (two-way random effects).

^bShrout and Fleiss (1979) reported the magnitude for interpreting ICC values where poor is less than .40, fair ranged from .40 to .59, good ranged from .60 to .74, and excellent was above .74.

supporting our first hypothesis. Construct and discriminant validity coefficients are reported in Table 3. LPO significantly correlated with measures of defensive functioning, object representation, and measures of personality pathology, supporting construct validity of the scale. Discriminant validity was supported by an absence of significant correlations between LPO ratings and unrelated constructs (e.g., session length, measures of depression and anxiety).

In exploratory analyses, LPO scores significantly correlated with three of five measures of health (positive health habits, recent health, and hospitalizations) and were marginally associated with intimate partner violence ($p = .06$). The robust association between LPO ratings and recent health and hospitalizations suggests that LPO scores are related to actual physical health and not physical complaints (i.e., somatization) because hospitalizations typically require diagnosable physical pathology.

Discussion

This investigation examined the reliability and validity of the PDC in assessing the LPO dimension of the PDM in an applied setting. The study was conducted with a sample of 88 urban-dwelling women who were seeking primary care medical services and also agreed to participate in our study by completing a battery of self-report questionnaires, as well as a brief interview that included an early memory procedure; descriptions of mother, father, and a significant other; and four preselected TAT cards. Our results showed that the LPO dimension of the PDC received fair to good interrater reliability among six psychodynamically oriented psychologists. Our results also demonstrated clinical utility, as interrater reliability was obtained despite a relatively short interview ($M = 24$ min) without a psychiatric or social history. Furthermore, raters were a diverse group of experienced psychologists familiar with the PDM who did not receive specialized training using the PDC or the PDM,

and who answered “very” or “extremely” 81% of the time when asked, “How useful do you feel the PDC was for comprehensively describing all the important personality problems of the individual?” The clinical utility and overall appreciation for the PDC expressed by rating psychologists were similar to those obtained in previous research (Bornstein & Gordon, 2012). Although our methods demonstrated the clinical utility of the PDC’s LPO dimension, future research that uses a more comprehensive in-depth psychodynamic interview (e.g., Shedler–Westen Assessment Procedure Clinical Diagnostic Interview; Westen, 2002) to assess LPO might bolster the reliability of the PDC.

Consistent with our hypothesis and previous findings using the PDC (Gordon & Stoffy, 2014), construct validity of the LPO dimension of the PDC was supported with individual correlations that yielded statistically significant associations between LPO and conceptually related psychodynamic variables (DFS, Conceptual Level Object Relations) and self-report personality pathology scores (PAS, PDQ). Support for discriminant validity was less clear-cut. Although the correlations between LPO scores and psychiatric symptoms did not reach statistical significance, the magnitude of these correlations (depression and anxiety) did not significantly differ from the correlations between LPO scores and a measure of object relations (CL; CLOR) and a measure of personality pathology (PAS) using a test by Steiger (1980): CLOR (.27) and depression (.16), $z = .74$, $p = .45$; CLOR (.27) and anxiety (.10), $z = 1.14$, $p = .25$; PAS (.22) and depression (.16), $z = .40$, $p = .69$; PAS (.22) and anxiety (.10), $z = .80$, $p = .42$. Although we expected LPO ratings to be independent of the less enduring construct of psychiatric symptoms, consistent with previous research examining LPO scores and symptom changes across treatment (e.g., Alpher, Henry, & Strupp, 1990; Cook, Blatt, & Ford, 1995; Vermote et al., 2009), future research that uses an interview that directly asks about psychiatric symptoms might influence observant ratings of LPO, leading to a stronger or significant association. Therefore, this is an area of further inquiry.

This investigation also conducted exploratory analyses to better understand the relationship between LPO ratings and measures of physical health, health-related behaviors, health care utilization, and intimate partner victimization. Specifically, we found a positive, statistically significant association between LPO scores and self-reported positive health habits (self-care) and current physical health functioning. Furthermore, higher LPO scores were related to fewer overnight stays at a hospital, which is considered to be a key objective indicator of legitimate negative health incidents (as compared to emergency room visits, which are often confounded by psychological factors). Although we consider these to be novel findings, these results were expected given previous research examining the

Table 3. Construct and discriminant validity coefficients for level of personality organization.

Overall defensive functioning	Conceptual Level of Object Representation	Personality Assessment Screener	Personality Diagnostic Questionnaire	Depression	Anxiety	Interview length	Positive health habits	Negative health habits	Recent health	Office visits	Hospitalizations	Emergency room visits	Intimate partner abuse
LPO	.45 ^a .27 ^{a,b}	-.22 ^{a,b}	-.34 ^a	-.16 ^{b,c}	-.10 ^{b,c}	-.01 ^d	.29	.04	.26	-.15	-.37	-.14	.20

Note. LPO = level of personality organization. Correlations with different superscripts are significantly different. Correlations with an absolute size $\geq .21$ are statistically significant ($p < .05$) with a sample of $N = 88$.

association between other personality constructs and physical health. For example, researchers have reported relationships between adaptive defense mechanisms and both self-reported and objective physical health (Malone et al., 2013; Vaillant, 1993, 2000), healthier object relations and self-reported physical health (Bram, 2014; Bram, Gallant, & Segrin, 1999), secure attachment and physical health (Mikail, Henderson, & Tasca, 1994), and neuroticism, hostility, and general personality pathology increasing the chances of negative physical health. We understand these findings using a developmental life-span approach, wherein a healthy LPO promotes social support, reflective functioning, and insight, thereby creating a healthier and more adaptive lifestyle (Shahar et al., 2011; Smith & Sprio, 2002). Unexpectedly, we did not find significant associations between LPO ratings and negative health habits or office visits. The relationship between LPO scores and victimization incidences involving intimate partner violence trended toward significance ($p < .065$).

Taken together, our results support the reliability, construct validity, and practical use of the LPO dimension of the PDC. Our study demonstrated similar psychometric properties to other interview-based psychodynamic measures of personality pathology, such as the Social Cognition and Object Relations Scale (SCORS-G; Stein et al., 2011; Westen, 1993) as applied to dream narratives (Eudell-Simmons, Stein, DeFife, & Hilsenroth, 2005) or general clinical use (Peters, Hilsenroth, Eudell-Simmons, Blagys, & Handler, 2006), the Structured Interview of Personality Organization (STIPO; Stern et al., 2010), the Operationalized Psychodynamic Diagnosis System Levels of Structural Integration Axis (OPD-LSIA; OPD Taskforce, 2001, 2008) among a clinical sample (Dinger et al., 2014) and when used by untrained students (Zimmermann et al., 2014; Zimmermann et al., 2012), the Karolinska Psychodynamic Profile (KAPP; Weinryb, Rössel, & Asberg, 1991) and the Scales of Psychological Capacities (SPC; Dewitt, Hartley, Rosenberg, Zilberg, & Wallerstein, 1991). This study is the first to answer a call for more research “investigating the relationship between different operationalizations of PO, preferably assessed by different observers (multi-method, multi-informant)” (Koelen et al., 2012, p. 367). These findings were obtained with “real-world” women seeking primary-care health services, a sample that does not traditionally receive psychodynamic services or research attention. Although other studies have found associations between physical health and the presence of personality disorders, types, and traits, this is the first study to our knowledge that has discovered significant associations between physical health and LPO ratings. Taken together, our results imply that LPO represents a construct significantly associated with psychological and physical health that can be reliably assessed by experienced psychologists with a limited amount of interview data.

Limitations of our study primarily involve our smaller sample (women who were predominantly African American), which limits the generalizability of our findings. Another limitation includes a potentially inflated correlation between overall LPO rating and CL, as the descriptions of mother, father, or significant other were part of the interview (approximately 3 min) used to code defenses. Additional limitations to consider include a relatively low interrater reliability precision (i.e., large

95% confidence intervals), potentially inflated construct validity on variables with the same respondent (i.e., ODF and CL ratings), potentially inflated reliability due to the lack of a test-retest design (see Chmielewski, Clark, Bagby, & Watson, 2015), and unclear incremental validity of the PDC predicting relevant criteria above and beyond self-report measures. Future studies are needed to establish the validity and reliability of PDC, especially using a larger sample of ethnically diverse men and women, a more in-depth psychodynamic interview that incorporates a direct assessment of psychiatric symptoms, and an objective measure of physical health above and beyond self-report, and raters with more specialized training in the PDC and psychodynamic conceptualization.

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