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Clinical Validity of Prototype Personality Disorder Ratings in Adolescents

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Abstract

A growing body of research shows that personality pathology in adolescents is clinically distinctive and frequently stable into adulthood. A reliable and useful method for rating personality pathology in adolescent patients has the potential to enhance conceptualization, dissemination, and treatment effectiveness. The aim of this study is to examine the clinical validity of a prototype matching approach (derived from the Shedler Westen Assessment Procedure – Adolescent Version) for quantifying personality pathology in an adolescent inpatient sample. Sixty-six adolescent inpatients and their parents or legal guardians completed forms of the Child Behavior Checklist (CBCL) assessing emotional and behavioral problems. Clinical criterion variables including suicide history, substance use, and fights with peers were also assessed. Patients' individual and group therapists on the inpatient unit completed personality prototype ratings. Prototype diagnoses demonstrated substantial reliability (median ICC = .75) across independent ratings from individual and group therapists. Personality prototype ratings correlated with the CBCL scales and clinical criterion variables in anticipated and meaningful ways. As seen in prior research with adult samples, prototype personality ratings show clinical validity across independent clinician raters previously unfamiliar with the approach, and they are meaningfully related to clinical symptoms, behavioral problems, and adaptive functioning.

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A growing body of research shows that personality functioning is considerably stable into adulthood, that personality pathology is clinically distinctive, and that personality disorders (PDs) are effectively diagnosable in adolescence (Bornovalova et al., 2009; Donnellan, Conger, & Burzette, 2007; Durrett & Westen, 2005; Levy et al., 1999; McGue, Bacon, & Lykken, 1993; Patricia, 2008; Roberts, Caspi, & Moffitt, 2001; Roberts & DelVecchio, 2000; Skodol et al., 2007; Westen, Betan, & DeFife, 2011; Westen et al., 2003). The current “polythetic” criterion approach of DSM has produced disappointing results vis-à-vis inter-rater reliability in field trials and continues to have considerable problems in clinical settings (Lahey et al., 1994; Maj, 2011; Ortigo, Bradley, & Westen, 2010; Westen et al., 2002; Widiger et al., 1996). This approach relies on cumbersome diagnostic procedures that are not cognitively parsimonious or memorable (Ahn & Kim, 2001; Westen, et al., 2002; Westen, Shedler, & Bradley, 2006; Widiger & Clark, 2000). The assumption that psychopathology is best diagnosed categorically has contributed to a host of problems (i.e., inability to detect subthreshold but clinically significant pathology; Blagov, Bradley, & Westen, 2007; Lewinsohn et al., 2000; Marshall et al., 2001). Dimensional diagnostic approaches are currently being considered for ICD-11 (Maj, 2011; Reed, 2010) and received widespread support (Kraemer, 2007; Reed et al., 2011; Shedler et al., 2010; Spitzer et al., 2008).

Westen, Shedler, and colleagues proposed a prototype rating approach designed to maximize rating accuracy while taking into consideration the cognitive characteristics of human assessors (Ortigo, et al., 2010; Shedler & Westen, 2004; Westen, et al., 2002; Westen & Shedler, 2000; Westen et al., 2012; Westen, et al., 2006). Cognitive research science on classification processes indicates that human thinking naturally relies on forms of cognitive prototype matching (Cantor & Genero, 1986; Horowitz, Post, et al., 1981; Horowitz, Wright, et al., 1981; Kim & Ahn, 2002; Rosch & Mervis, 1975). Rather than memorize symptom lists with arbitrary and variable cutoffs across disorders, diagnosticians can form mental representations of coherent syndromes, in which signs and symptoms may be linked by meaningful functional relations (Ahn, 1999). The prototype-matching method preserves a configurational or syndromal approach to personality classification (Blashfield, 1985; Horowitz, Post, et al., 1981; Pilkonis, 1988; Rounsaville et al., 2002) while allowing dimensional assessment on a scale from 1 (no match) through 5 (very good match). The method parallels diagnosis in many areas of medicine, where variables such as blood pressure are measured on a continuum, but physicians refer to certain ranges as “borderline” or “high.”

Additionally, clinical utility findings suggest that many clinicians may prefer a prototype rating approach over current diagnostic methods. As illustrated in a recent WHO-sponsored survey, psychiatrists prefer a diagnostic method that has many of the features associated with prototype diagnosis including (Reed et al., 2011). With respect to PDs, multiple independent studies of clinicians rated prototype diagnosis substantially more useful, comprehensive, and clinically efficient than DSM-IV diagnosis or other dimensional alternatives (Rottman et al., 2009; Spitzer, et al., 2008; Westen, et al., 2006).

More research has begun to focus on the reliability and validity of prototype diagnosis. Reliability of prototype personality ratings by independent observers of the same clinical

material is high, with median inter-rater reliability across personality disorders of $r = .72$ (Westen et al., 2010). Across a number of studies, prototype ratings correlate highly with, and have similar correlates to, both categorical and dimensional diagnoses obtained by summing DSM-IV criteria or using self-report measures of specific syndromes (DeFife, et al., 2013; Guarnaccia et al., in review; Ortigo, et al., 2010; Westen, et al., 2006).

Moving forward, research needs to assess the clinical validity (i.e. the degree of diagnostic agreement between clinically-expert raters in applied practice; Pilkonis et al., 1991; Skodol et al., 1988; Spitzer, 1983) and criterion validity of prototype diagnosis in diverse clinical settings. The aim of the current study is to examine these issues in an adolescent inpatient sample and build upon a growing body of reliability, utility, and validity data for prototype personality disorder ratings.

Method

Newly admitted patients to Nassau University Medical Center's adolescent inpatient unit and their legal guardians were approached by the staff for consent to participate in an assessment and outcome study. Patient and parent-report clinical measures were collected at admission. Patients on the unit were assigned to an individual and group psychotherapist in an ecologically valid manner based on clinician availability and caseload. Individual and group psychotherapy each consisted of three times weekly meetings. Individual and group psychotherapists independently completed clinical ratings on patient discharge.

Participants

Participants ($n = 66$) were adolescent inpatients seen at Nassau University Medical Center between August 2010 and June 2011 (43% of the total patients admitted to the unit). Thirty-two female and 34 male patients consented for the study with an average age of 15.8 years ($SD=1.17$). The ethnicity of the sample was 61% Caucasian, 32% African-American, 25% Hispanic, 2% Asian, and 5% other. A range of socioeconomic status was represented, with 49% identified as working class, 39% middle class, 9% upper middle class, and 4% poor. The socioeconomic status was reported by the individual using all available information known about the patient and his or her background. The average length of stay on the unit was 11 days ($SD=5.14$). The primary diagnosis for these 66 patients was as follows: 62% Mood Disorders, 32% Conduct Disorder/Oppositional Defiant Disorder, 3% Post Traumatic Stress Disorder, 2% Psychosis, 1% Impulse Control Disorder. We found no significant differences in age, gender, diagnosis, or scores on admission measure between those who consented to the study versus those who did not consent.

Participating clinicians included a licensed clinical psychologist with over five years of experience and advanced clinical psychology doctoral students (interns and externs) who had completed advanced coursework in assessment at an APA-accredited clinical psychology PhD program.

Measures

Clinical Data Form (CDF; Westen & Shedler, 1999)—The Clinical Data Form is a clinician-report form that gathers information on demographic, diagnostic, etiological, and

adaptive functioning variables. Data collected with the form concerning developmental history and life events shows strong agreement (cross-method validity) with data collected from patients ($r = .74-.96$; DeFife et al., 2010). Adaptive functioning variables assessed via the Clinical Data Form (e.g., GAF scores) have likewise shown high reliability and validity vis-à-vis ratings by independent observers (DeFife, et al., 2010; Dutra, Campbell, & Westen, 2004; Westen et al., 1997). All demographic information recorded on the CDF was gathered from a combination of the individual therapist, unit social worker, attending psychiatrist, and any collateral sources (i.e., parent/legal guardian, school psychologist, teachers, case worker) so that demographic information was based on all available reliable data.

Child Behavior Checklist (CBCL; Achenbach, 1991; Achenbach & Rescorla, 2001)—The CBCL is a questionnaire assessing behavioral and emotional problems in children and adolescents. For this study, we used the self (also known as the Youth Self-Report [YSR]) and parent-report forms of the instrument. The questionnaire includes 113 items scored on a 3-point scale ($0 = \text{not true}$, $1 = \text{somewhat true}$, $2 = \text{often true}$). Two broadband scores (Internalizing and Externalizing Problems) and eight different syndrome scales (Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule Breaking, Aggressive Behavior) are calculated. The CBCL has established reliability and validity (Achenbach, 1991; Achenbach & Rescorla, 2001).

Shedler-Westen Assessment Procedure-Adolescent-Prototypes (SWAP-A-Prototypes; Westen, et al., 2003)—Westen and colleagues empirically derived adolescent personality disorder prototypes (known as the SWAP-A) from a large national sample of clinicians ($n = 296$) treating child and adolescent patients in their practice. The clinicians used a 200-item Q-sort instrument (to describe an adolescent patient in their treatment for “enduring maladaptive patterns of thought, feeling, motivation, or behavior—that is, personality.” They applied Q-factor analysis to identify empirically distinct diagnostic clusters and generated five PD types (i.e., Antisocial/Psychopathic, Emotionally-Dysregulated, Avoidant/Constricted, Narcissistic, and Histrionic) and a higher-functioning personality style (i.e., Inhibited/Self-Critical). For each cluster, a paragraph-long prototype was constructed using the most empirically descriptive items (see Figure 1 for example). In this study, individual and group therapy clinicians rated the prototypes on a five-point scale, where $1 = \text{little or no match}$ between the patient and the prototype (description does not apply) and $5 = \text{a very good match}$ (patient *exemplifies* the description; a prototypical case).

Results

We examined the level of agreement of prototype ratings between the adolescent patient’s individual and group therapists. Because two sets of prototype ratings can be perfectly correlated without showing actual diagnostic agreement (e.g., prototype rating scores of 2,4,2,4 are perfectly correlated with another rater’s scores of 1,5,1,5, but show no actual diagnostic agreement), we calculated one-way random average measures intraclass correlation coefficients [ICC(1,2)] for the ratings on each prototype scale. ICCs of $< .40$ are considered poor, fair = $.40 - .59$, good = $.60-.73$, and $> .74$ is considered excellent (Fleiss, 1981). Even though this study uses a cross-method and not strictly inter-rater reliability

measurement design (i.e., rating scores were not based on two observations of the same clinical material, but on *independent* clinical observations of behavior in two different treatment contexts: individual versus group therapy), the ICCs (seen in Table 1) were in the fair to excellent range for inter-rater reliability (Fleiss, 1986), with a median ICC in the excellent range at $ICC = .75$. There was also an exceptional degree of rating consistency across raters, with 84–97% of prototype scale ratings falling within a one point margin across the two raters. Table 2 provides the means and standard deviations of prototype personality ratings (averaged across individual and group therapist) and a prevalence percentage of adolescents meeting or exceeding the diagnostic “caseness” rating (i.e., a prototype rating score of 4 or greater). As might be expected on an adolescent acute inpatient unit, Emotionally-Dysregulated PD was the most represented prototype rating, followed by Antisocial-Psychopathic PD, whereas the higher functioning inhibited/self-critical style was least prevalent.

We report correlations between personality prototype ratings and YSR and parent-report form summary scale variables in Table 3. The clinician prototype ratings show significant associations in distinct patterns across both self and parent-reported behavioral problems. Avoidant/Constricted and the higher functioning variant, Inhibited/Self-Critical, style were both inversely related to externalizing behavior problems assessed from either the patient’s or parent’s perspective. Narcissistic PD prototype ratings were significantly correlated with parent-, but not self-, reported externalizing behavior problems. Antisocial PD was inversely related to internalizing behaviors via self-report and strongly positively associated with externalizing behavior problems on parent-reports. Conversely, parents of Emotionally-Dysregulated patients reported significantly fewer externalizing problems, but the patients themselves reported a significantly greater degree of internalizing problems.

We also investigated the relationship between the prototype ratings and the subscales of the CBCL and YSR (Table 4 and 5 respectfully). Ratings on the Antisocial/Psychopathic PD were positively correlated with parent rated scales of Rule Breaking and Aggressive Behavior while self-reports did not show this correlation. Emotionally-Dysregulated PD ratings were positively related to the YSR scale, Anxious/Depressed. Avoidant/Constricted PD ratings were inversely related to parent-rated CBCL scales of Rule Breaking and Aggressive Behavior and self-reported YSR scale of Aggressive Behavior. Narcissistic PD ratings were positively related to parent-rated CBCL scales of Rule Breaking and Aggressive Behavior but not on self-reported YSR. Inhibited/Self-Critical prototype ratings were positively correlated with self-reported YSR scale measuring Anxious/Depressed and negatively correlated on both the self-reported YSR and parent-rated CBCL scales measuring Rule Breaking and Aggressive Behavior.

Finally, Table 6 reports correlations between prototype personality ratings and clinical reports of pathological behavior problems recorded via the Clinical Data Form. Patients with higher Antisocial/Psychopathic PD ratings were significantly more likely to have school discipline problems, physical fights with peers, and substance abuse histories. Emotionally-Dysregulated PD ratings were significantly correlated with a prior suicide attempt, and Narcissistic PD patients were more likely to have school discipline problems. Avoidant/Constricted PD ratings were inversely related to substance abuse problems, and patients with

a more Inhibited/Self-critical style were less likely than other patients on the unit to have maladaptive problems with school discipline, physical fights, or substance abuse.

Discussion

These results provide evidence for the clinical validity of prototype personality disorder ratings in clinical practice with adolescents. Even with a novel rating approach previously unfamiliar to the clinicians in this sample, prototype personality ratings showed substantial agreement across independent clinical raters. Whereas field trials and inter-rater interview studies comparing diagnoses made by different structured interviews and questionnaires for the same PDs administered days or a few weeks apart have shown low correlations and even lower kappa coefficients indicating convergent diagnoses (Clark, Livesley, & Morey, 1997; Pilkonis et al., 1995; Skodol et al., 1991), we found high intraclass correlation coefficients (median ICC = .75) between two assessments made by independent assessors from naturalistic inpatient practice. While the study design focused on clinical utility and validity (i.e., ratings were made based on material from independent clinical data sources), these results extend prior work on the inter-rater reliability of prototype personality ratings made from the same videotaped clinical hours (Westen, et al., 2010). Furthermore, prototype ratings showed significant associations with clinical problems rated across informants, including self, parent, and clinical report data, adding to increasing evidence of the validity, reliability, and clinical utility of prototype rating in research on personality disorders (Rottman, et al., 2009; Skodol et al., 2011; Westen, et al., 2012; Westen, et al., 2006).

We found some noteworthy results because we utilized self-report and parent reported data. The lack of awareness of one's behavioral impact on others characteristic of Narcissistic PD was possibly reflected in the finding that the Narcissistic PD prototype rating was significantly correlated with parent-, but not self-, reported externalizing behavior problems. Antisocial/Psychopathic and Emotionally-Dysregulated PD ratings showed interesting divergent correlations between self and parent-report CBCL forms. Perhaps the complicated self/other interpersonal disturbances prevalent in both these forms of personality pathology are highlighted in these findings, with Antisocial PD inversely related to internalizing behaviors via self-report and strongly positively associated with externalizing behavior problems on parent-reports.

Twenty-seven percent of patients in our sample scored a 4 or 5 on at least one PD prototype. The prevalence of PDs in adolescent clinical samples is understudied (Shiner & Tackett, 2014). Only two studies (Feenstra, Busschbach, Verheul, & Hutsebaut, 2011; Grilo et al., 1998) to date have investigated the prevalence rates of PDs with these populations and found that between 41 and 64% of patients in a clinical setting have diagnosed PDs. One explanation for the differences in prevalence rates between our sample and the other two studies may be that our sample did not contain as many patients demonstrating personality pathology. Our study contains a smaller sample than the two other mentioned studies and, as such, we could have conducted the study during a period in which fewer patients admitted were experiencing a diagnosable personality disorder. Our sample might not be indicative of the overall personality pathology experienced on the inpatient unit. Future research will need to be done with larger samples taken over a longer period of time to assess this. Another

possibility is that prototypes yield appropriately conservative PD diagnoses. Past research on prevalence utilized DSM criteria for PD diagnosis. The prototypes used here and the DSM criteria for PD diagnosis were constructed differently. The method in which the prototypes were constructed was based on data on naturally occurring clusters. The categories used in the DSM are based on clinical convention derived from clinicians' experiences with patients.

Clinicians are reluctant to implement the existing personality disorder diagnostic system with its laundry list of symptoms, cumbersome algorithms, overlapping criteria, and descriptive vagaries. Using a prototype system, clinical assessors could briefly and efficiently generate a classification rating that indicates for each syndrome both the extent to which the patient resembles the prototype and whether the patient matches the prototype strongly enough to receive a categorical classification.

Our study is a first step in many ways. This is the first time, to the authors' knowledge, that the prototype diagnoses have been evaluated by using them in the way they would be potentially used in everyday clinical work (i.e., based on information from clinical contact and not structured interviews). Given the small sample, the current study is by no means a definitive statement on the utility and applicability of dimensional personality prototype ratings. However, our findings do highlight the cross-observer and concurrent validity of personality prototype ratings, adding to a growing body of work supporting alternative approaches to personality classification for research and applied practice. Future research on this prototype approach will require larger samples. Additionally, future studies would do well to compare prototype ratings results from structured interviews with ratings done by clinicians who have been treating the patients. Because our sample was based on average length of stay of 11 days studies would need to evaluate this prototype matching approach in outpatient samples in which clinicians will know the patient for longer periods. That being said, our results are encouraging because even with somewhat limited exposure clinicians showed good reliability with the prototype ratings.

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Antisocial/Psychopathic Personality

Adolescents who match this prototype tend to be rebellious or defiant toward authority and often get into power struggles with adults. They tend to be angry, hostile, or oppositional, and often express intense and inappropriate anger out of proportion to the situation at hand. They are contrary or quick to disagree, and tend to blame others for their own failures and shortcomings, believing their problems are caused by external factors. They frequently act impulsively without regard for consequences and may appear to feel immune or invulnerable. They get pleasure or self-esteem from being seen as "bad" or "tough" and tend to surround themselves with peers who are delinquent or deeply alienated. They react to criticism with feelings of rage or humiliation, and tend to break things or become physically assaultive when angry. They tend to be unreliable and irresponsible (e.g., failing to meet work obligations or honor financial commitments) and become easily frustrated or give up quickly. They tend to feel bored and often seek thrills, novelty or adventure. They tend to be critical of others, and feel misunderstood, mistreated, or victimized. They tend to deceive, lie to, or mislead people.

1	little or no match (description does not apply)	
2	some match (patient has <i>some features</i> of this disorder)	
3	moderate match (patient has <i>significant features</i> of this disorder)	Features
4	good match (patient <i>has</i> this disorder; diagnosis applies)	Diagnosis
5	very good match (patient <i>exemplifies</i> this disorder; prototypical case)	

Figure 1.
Adolescent Antisocial/Psychopathic personality prototype

Table 1

Individual and group therapist agreement on SWAP-A prototype personality ratings (n = 61)

SWAP-A Prototype	ICC (1,2)
Antisocial/Psychopathic	.77
Emotionally-Dysregulated	.55
Avoidant/Constricted	.77
Narcissistic	.84
Histrionic	.68
Inhibited/Self-Critical style	.73

Table 2

Mean of SWAP-A prototype personality ratings and categorical classification prevalence for each disorder (n = 66)

SWAP-A Prototype	Mean (SD)	Categorical classification “caseness” prevalence (%)	Personality Pathology ^I
Antisocial/Psychopathic	2.18 (.99)	7.5%	34.8%
Emotionally-Dysregulated	2.49 (.80)	9.1%	34.8%
Avoidant/Constricted	1.92 (.92)	3.0%	16.6%
Narcissistic	1.55 (.76)	3.0%	10.6%
Histrionic	1.58 (.77)	3.0%	9.1%
Inhibited/Self-Critical style	1.63 (.79)	1.5%	10.6%

^I Percentage of patients who had a score of 3 (equivalent to “features”) or above

Table 3

Pearson product moment correlations between the mean SWAP-A prototype rating and YSR self (n = 52) and CBCL parent-report (n = 35) rating scales.

SWAP-A Prototype	YSR		CBCL Parent-Report	
	Internalizing	Externalizing	Internalizing	Externalizing
Antisocial/Psychopathic	-.36**	.17	-.26	.50**
Emotionally-Dysregulated	.28*	-.07	-.01	-.56**
Avoidant/Constricted	.01	-.35*	.03	-.47**
Narcissistic	-.08	.10	-.09	.41*
Histrionic	.01	-.11	-.08	-.14
Inhibited/Self-Critical Style	.23	-.41**	.02	-.59**

Note:

*
 $p < .05$,

**
 $p < .01$

Table 4
Correlations between the mean SWAP-A prototype scores and the Child Behavior Checklist Scales (n = 35)

	Anxious/Depressed	Withdrawn/Depressed	Somatic Complaints	Social Problems	Thought Problems	Attention Problems	Rule Breaking	Aggressive Behavior
Antisocial/Psychopathic	-.34*	-.10	-.28	.14	.12	.31	.55**	.43**
Emotionally-Dysregulated	.10	-.11	.09	-.28	-.32	-.48**	-.54**	-.53**
Avoidant/Constricted	-.03	.14	-.07	.00	-.31	-.27	-.44**	-.46**
Narcissistic	.00	-.25	-.01	-.05	.13	.25	.47**	.33*
Histrionic	.04	-.27	.00	-.26	.05	-.17	-.03	-.17
Inhibited/Self-Critical	.20	.03	.13	-.04	-.15	-.38*	-.50**	-.48**

Note:

* $p < .05$,

** $p < .01$

Table 5

Correlations between the mean SWAP-A prototype scores and the Youth Self-Report Scales (n = 52)

SWAP-A Prototype	Anxious/Depressed	Withdrawn/Depressed	Somatic Complaints	Social Problems	Thought Problems	Attention Problems	Rule Breaking	Aggressive Behavior
Antisocial/Psychopathic	-.37**	-.32*	-.25	-.13	-.16	-.11	-.25	.06
Emotionally-Dysregulated	.37**	.20	.14	.07	.09	.06	-.09	-.04
Avoidant/Constricted	.04	.09	-.12	.09	-.12	.08	-.27	-.35*
Narcissistic	-.18	-.11	.11	-.24	.02	.06	.22	-.02
Histrionic	.02	-.03	.04	-.17	-.01	-.22	-.10	-.09
Inhibited/Self-Critical	.29*	.24	.06	.02	.07	-.03	-.43**	-.31*

Note:

* $p < .05$,** $p < .01$

Table 6

Pearson product-moment correlations between SWAP-A prototype mean scores and Clinical Data Form ratings of patient behavioral problems.

SWAP-A Prototype	School discipline problems	Prior suicide attempt	History of physical fights	Substance abuse
Antisocial/Psychopathic	.46**	-.02	.58**	.36**
Emotionally-Dysregulated	-.02	.37**	-.08	-.16
Avoidant/Constricted	-.15	-.14	-.06	-.35**
Narcissistic	.37**	.15	.01	.25
Histrionic	.25	.23	-.04	.09
Inhibited/Self-Critical Style	-.52**	-.06	-.42**	-.47**

Note:

* $p < .05$,

** $p < .01$;

¹ GAF rating was the average of the individual and group therapist GAF ratings