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Personality Subtypes of Post-Traumatic Stress Disorder

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An abstract of

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Abstract

Personality Subtypes of Post-Traumatic Stress Disorder

By Eric Russ, M.A.

The majority of research on Post-Traumatic Stress Disorder (PTSD) treats the disorder as a unitary construct. However, researchers have recently begun identifying subtypes of PTSD using self-report personality inventories. This approach has identified three subtypes: Externalizing, Internalizing, and Resilient. This paper expands on previous research by subtyping PTSD using the SWAP-II, a personality Q-sort for expert rather than lay informants. Study 1 identifies and provides preliminary validity data for 5 subtypes of PTSD in a national sample of adults in treatment: Externalizing Dysregulated, Internalizing, Resilient, Dependent, and Obsessional. Study 2 extends the validation of these subtypes to a highly traumatized inner-city non-psychiatric population. Study 3 identifies PTSD subtypes in a national sample of adolescents in treatment. Implications for future research are discussed.

Personality Subtypes of Post-Traumatic Stress Disorder

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Personality Subtypes of Post-Traumatic Stress Disorder

The diagnostic criteria for Post-Traumatic Stress Disorder (PTSD) attempt to capture a wide range of reactions to a traumatic stressor in a single diagnosis. Traumatic experiences are common, with some studies reporting that up to 40% of people in the United States have experienced at least one traumatic event (Breslau, 1998; Breslau, Davis, Andreski, & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Nevertheless, the National Comorbidity Survey suggests the lifetime prevalence of PTSD is 7.8% (Kessler, et al., 1995). These data suggest that though rates of trauma are high, rates of PTSD are not. However, rates of PTSD vary widely across populations; rates range from 5-10% in the general population (Kessler, et al., 1995) but can reach well over 30% in populations exposed to high amounts of trauma (e.g., Gillespie et al., 2009; Hoge et al., 2004).

A diagnosis of PTSD in the Diagnostic and Statistical Manual, 4th Ed. (DSM-IV) requires that a person meet a particular combination of 17 symptoms divided into four categories (American Psychiatric Association, 2000; see Appendix A for full criteria). Criterion A requires the experience of a traumatic event and intense fear, helplessness, or horror in response to that event. Criterion B requires at least one re-experiencing symptom, followed by at least three of seven avoidance symptoms in Criterion C and two or more hyper-arousal symptoms in Criterion D. This diagnostic approach allows for hundreds of different symptom combinations all subsumed under the global PTSD category. Thus, people with PTSD show a substantial amount of heterogeneity in their symptom presentation.

Accurately understanding this heterogeneity has wide ranging implications for PTSD research and clinical practice. Treating PTSD patients as a single group may mask important relationships that could be seen if reliable subtypes exist. Two examples highlight this point.

First, although several treatment approaches have been shown to improve PTSD symptoms, most studies are highly selective in their recruitment and show only modest gains (Bradley, Greene, Russ, Dutra, & Westen, 2005a). Developing clear subtypes of PTSD may be a crucial first step toward matching effective treatments with patients who could benefit. In other words, our ability to treat patients with PTSD effectively may be significantly enhanced if we have a better understanding of the personality configurations (i.e., a particular subtype) of the people we are trying to treat.

The second example involves research on the etiology of PTSD. A substantial body of literature has identified a number of variables that contribute to risk and/or resilience (Breslau & Andreski, 1995; Breslau, Davis, & Andreski, 1995; Breslau, Davis, Peterson, & Schultz, 1997; Gillespie, et al., 2009; Ozer, Best, Lipsey, & Weiss, 2003; Zlotnick et al., 2004). However, these studies may be missing important predictors by grouping all people with PTSD together. For example, if subtype 1 of PTSD correlated with variable X at r =.5 and subtype 2 correlated at r = -.5, the correlation between PTSD and variable X will appear close to zero if the prevalence of the two subtypes in research samples is similar. Thus, an accurate understanding of subtypes has substantial implications for both research and practice with patients with PTSD.

One promising domain for organizing the heterogeneity of PTSD is personality. This dissertation begins with a discussion of why personality is important in understanding psychopathology broadly, and then reviews the evidence for the particular usefulness of understanding the impact of trauma through the lens of personality. Then three novel studies using a Q-sort personality measure to subtype PTSD are presented. Finally, the implications of these studies on current understanding of PTSD are discussed.

Personality as a context for psychopathology

The current diagnostic system, as delineated in the 4th edition of the DSM-IV (2000), uses a multi-axial approach to diagnosis, separating out clinical diagnoses, personality disorders, medical disorders, psychosocial difficulties and a global adaptive functioning (GAF) score. This discussion focuses on the first two axes, as they comprise the core clinical diagnoses. Axis I describes clinical disorders, subsuming what we tend to think of as psychological difficulties such as anxiety and depression. Axis II describes personality disorders defined as "an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible…is stable over time, and leads to distress or impairment" (p. 685, American Psychiatric Association, 2000).

This separation of psychological difficulties from personality has not always been the case in psychiatric diagnosis. As psychiatry began to take shape as a field, two approaches to the classification of mental disorders emerged. The first approach attempted to distinguish patients suffering from identifiable disease processes (e.g., psychosis), largely independent of personality. The second approach began with Freud, who was developing his psychosexual model of development and describing personality types that co-occurred with disruptions at each stage. These psychoanalytic ideas of personality continued to develop, focusing on difficult to measure unconscious processes. This second approach dominated the first two iterations of the DSM. However, when revisions were being made for the third edition of the DSM, researchers began arguing for syndromal diagnoses that were not only more theory-neutral but also more explicit and less inferential, to increase reliability across research studies (Spitzer, Endicott, & Robins, 1978), thus privileging the first approach and codifying the split between clinical

syndromes and personality into our diagnostic system in what we now know as Axis I and Axis II disorders.

Though this split has undoubtedly led to tremendous research gains, it may have resulted in a compromise of reliability over validity by separating clinical syndromes from personality pathology in artificial ways. In fact, this appears to be the case, as researchers have once again been focusing on understanding psychopathology through the lens of personality. This approach has experienced a resurgence in clinical research since Watson and Clark (1984) demonstrated the importance of the personality trait of negative affect in understanding mood and anxiety disorders. They argued that the trait of negative affect significantly contributed to the expression of most mood and anxiety disorders. In this trait framework, personality is understood as a set of hierarchically organized traits, usually viewed dimensionally (e.g., one may be high or low on the personality trait of agreeableness). Researchers using this framework largely use factor analysis to reveal latent constructs underlying self-report measures. While the precise nature of the trait hierarchy is still contested, Krueger and colleagues have suggested that broad internalizing and externalizing personality traits underlie most mental disorders (Krueger, 1999; Krueger, McGue, & Iacono, 2001; Krueger & Piasecki, 2002; Krueger & Tackett, 2003).

PTSD: A Brief History

Having reviewed the history of the importance of personality on mental disorders, we now turn to a history of PTSD as a diagnosis. As with most of clinical psychology, the roots of PTSD extend to the early writings of Freud. He described symptoms of traumatic and war neuroses (civilian vs. military trauma) that closely reflect the modern diagnosis including intrusive images, physiological hyperactivity, and re-experiencing of the event in flashbacks and

nightmares (Wilson, 1994). Freud's early theories of psychopathology were heavily influenced by an understanding of traumatic responses, however, as Freud moved toward more complex intrapsychic explanations of psychopathology the role of traumatic events declined in importance.

Despite this history, the modern diagnosis of PTSD has emerged relatively recently. Although, as noted above, the idea that traumatic effects change behavior has existed for centuries, the current criteria emerged from the study of "combat neuroses" starting in World War II and became formalized during the Vietnam War (see Herman, 1992 for more detailed history).

The modern diagnosis of PTSD is unique among DSM-IV disorders in that the diagnosis is yoked to etiology, in this case, a prior traumatic experience. The diagnosis attempts to capture a particular set of symptoms common to those experiencing distress following a traumatic event. This focus on developing a unitary symptom list has advanced our understanding of trauma in impressive ways; however, as explained above, this approach may miss important variation within the disorder and thus may inhibit our ability to fully understand the course and treatment of PTSD.

Two reasons make a personality approach particularly useful for understanding this variation within PTSD. First, the structure of the diagnostic criteria allows very different expressions of the disorder to be captured under a single diagnosis (e.g., a withdrawn avoidant expression vs. an angry impulsive expression) which may map well onto personality dimensions (Miller, Fogleer, Wolf, Kaloupek, & Keane, 2008; Miller, Kaloupek, Dillon, & Keane, 2004). Second, a large body of research discussed below has demonstrated significant comorbidity between PTSD and personality disorders, suggesting the importance of understanding the role of

personality variables in the development and expression of the disorder (Bradley, Jenei, & Westen, 2005c; Bradley, Westen, & Heim, 2003; Golier et al., 2003). Now that we have briefly reviewed the history of PTSD and personality, we now turn to how they are related.

Trauma and Personality Disorders

Interest in the relationship between trauma and personality began with studies examining the etiology of personality disorders (PDs) and recognizing an association between childhood trauma and the development of PDs (Johnson, Cohen, Brown, Smailes, & Bernstein, 1999b). This research initially focused on two specific disorders: Antisocial Personality Disorder (ASPD) and Borderline Personality Disorder (BPD). A substantial body of literature links childhood abuse to increased rates of ASPD (and its close cousin, psychopathy). While there is some variability in this literature, the strongest longitudinal evidence suggests physical abuse and neglect are strongly correlated with increased rates of ASPD (Cohen, Brown, & Smailes, 2001; Horwitz, Widom, McLaughlin, & White, 2001; Luntz & Widom, 1994).

Other researchers have focused on the impact of childhood sexual abuse on the development of BPD (Bradley, et al., 2005c; Bradley & Westen, 2005; van der Kolk, Hostetler, Herron, & Fisler, 1994; Zimmerman & Mattia, 1999). The balance of this research demonstrates that the risk of developing ASPD and BPD increases significantly when childhood abuse has occurred (Herman, Perry, & Van der Kolk, 1989; Johnson, et al., 1999b; MacMillan et al., 2001). Although there appears to be some modest association between types of abuse and specific personality disorders, it is becoming increasingly clear that childhood abuse of any form increases the risk for general personality dysfunction in adolescence and adulthood (Bradley, et

al., 2003; Johnson, Cohen, Brown, Smailes, & Bernstein, 1999a; Johnson et al., 2002; Johnson et al., 2001).

A second line of evidence supporting the link between childhood trauma and personality dysfunction has emerged from research on what is known as *Complex PTSD*. Several research groups have proposed creating a separate diagnostic grouping known as Complex PTSD (also called Developmental Trauma Disorder) to reflect the distinct presentation of those who have been subjected to long-term, chronic traumatic experiences, such as torture or extensive childhood abuse (Beck & Van der Kolk, 1987; Herman, 1992; Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997b). Though controversial and not included in the current DSM, research on Complex PTSD highlights the need for understanding the impact of trauma on development (Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997a). In fact, there appears to be a relationship between age at which trauma occurs and the expression of traumatic symptoms (van der Kolk, 2005; van der Kolk, Roth, Peclovitz, Mandel, & Spinazzola, 2005). For example, one study shows that abuse before age 12 is correlated with depression, whereas abuse after age 12 correlates with PTSD (Schoedl et al., 2010). Additional research supporting this perspective can be found in a wide body of research demonstrating a relationship between childhood trauma and disrupted adult attachment styles (Agrawal, Gunderson, Holmes, & Lyons-Ruth, 2004; Alexander et al., 1998; Fonagy et al., 1996; Fonagy, Target, & Gergely, 2000; Nakashi-Eisikovits, Dutra, & Westen, 2002; van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

Overall, this body of research has two implications for the present studies. First, it suggests that trauma and personality disturbance can be strongly linked, although the nature of the association varies substantially. Second, the research suggests that the effect of trauma on

personality may vary depending on the life-stage when it is experienced. Thus, this body of research strongly suggests that personality variables play an important role in the understanding of PTSD.

Biological Variation

Thus far we have argued for the heterogeneity of PTSD based on diagnostic criteria and research on personality disorders. However, this discussion would be incomplete without an understanding of the biological influences on PTSD expression. Recent research has begun to shed light on neurobiological correlates of PTSD. One study found, for example, decreased hippocampal volume in Vietnam veterans with PTSD compared to their non-combat exposed identical twins (Pitman et al., 2006). Differences in the human stress response system may result in expressions of PTSD that are phenomenologically very different.

One example of this biological variability comes from research examining cortisol responses of people who have been traumatized. In one study, women who had been abused in childhood showed hyper-reactive stress responses, likely due to elevated cortisol levels (Heim et al., 2000). However, some studies on PTSD indicate that people who have been through traumatic events have an *under-reactive* stress system (Golier & Yehuda, 1998; Yehuda, Teicher, Trestman, Levengood, & Siever, 1996). These contradictory findings may be describing two different kinds of people, one group who reacts to physical abuse by becoming over-reactive to stress and another group who reacts to physical abuse by becoming under-reactive. Similar findings linked to personality subtypes have been identified in eating disorders (Wonderlich et al., 2005)

Underlying this biological variation lies a host of candidate genes that may contribute to variability for risk or expression of PTSD (Broekman, Oliff, & Boer, 2007; Koenen, 2007). Another promising line of research involved gene by environment interaction studies. One example is a study that found an interaction between FKBP5, a gene that assists in modulating the glucocorticoid system, and child abuse (Binder et al., 2008) predicted PTSD in adulthood following a traumatic event. One possibility (as yet untested) is that varying gene by environment interactions may result in differing expressions of PTSD.

While a complete review of these bodies of research is not the focus of this paper, these studies suggest a tremendous amount of variability in the underlying stress systems and genes of people who develop PTSD, and thus potentially identifiable variability in personality and symptom structures. Whether these variations represent additional risk/resilience factors, or in fact lead to differing expression of PTSD, remains an open question. However, these data further support the case that studying PTSD as a homogenous phenomenon may lead to misleading results.

Overall, it seems clear from 1) the data on PTSD variation based on trauma history, 2) the data on trauma and personality correlates, and 3) the research on biological and genetic diversity within PTSD, that there is a need for a method of identifying potential subtypes of PTSD. The first step in testing this question empirically is the identification of reliable phenotypic subtypes of PTSD. The purpose of this paper is to empirically identify such subtypes, using a reliable and valid method. First, however, I review the existing literature on PTSD personality subtyping.

Trait Research and PTSD

Research on the relationship between PTSD and personality traits has only recently begun to emerge. In a recent review of this literature, Miller (2003) uses the three factor approach of Tellegen and colleagues (1985), which includes negative emotionality/neuroticism (NEM) (the tendency toward negative mood states), positive emotionality (PEM) (the tendency toward positive mood states), and Constraint (CON) (a dimension of disinhibition vs. self-control reflecting a degree of planfullness vs. impulsiveness). Miller's review of the four prospective studies of PTSD and personality (Bramsen, Dirkzwager, & Van der Ploeg, 2000; Lee, Valliant, Torrey, & Elder, 1995; O'Toole, Marshall, Schureck, & Dobson, 1998; Schnurr, Friedman, & Rosenberg, 1993) suggests that all three traits predict the development of PTSD, with NEM as the strongest predictor. These four studies all measured personality before the subjects experienced trauma, which suggests that these traits are present before the traumatic event and are acting as risk factors (although this does not rule out the inverse- traumatic events influencing personality). However, these prospective PTSD studies necessarily used high-risk samples (e.g., soldiers before being deployed), thus limiting their generalizability. Additionally, none of the studies used broad personality measures (i.e., those that capture normal and abnormal personality).

In addition to the prospective studies, Miller also applied the three-factor model to six cross-sectional studies of PTSD that included data from self-report personality measures. Across studies he identified two subtypes. Both subtypes had high NEM but differed on PEM and CON. The first subtype, labeled internalizing, was defined by low PEM and an expression of PTSD in which avoidance and depressive symptoms were the primary difficulty. The second subtype,

labeled externalizing, was defined by low CON and an expression of PTSD in which impulsivity and aggression were the primary difficulties. He also identified a psychologically healthy resilient subtype in some studies.

Externalizing and Internalizing subtypes of PTSD have now been found in several studies applying cluster analysis to the Multidimensional Personality Questionnaire (MPQ) and Minnesota Multiphasic Personality Inventory, 2nd ed. (MMPI-2) in both male veterans and female sexual assault survivors (Cox, Clara, & Enns, 2002; Kirz, Drescher, Klein, Gusman, & Schwartz, 2001; Miller, et al., 2008; Miller, Greif, & Smith, 2003; Miller, et al., 2004; Miller & Resick, 2007).

One additional longitudinal study published since Miller's review suggests that different trajectories (symptoms increasing or decreasing over time) of comorbid PTSD and substance are differentially associated with different PDs (McDevitt-Murphy et al., 2009). They describe 6 patterns of comorbidity (e.g., low substance use, high PTSD) over 4 years. Though not the primary focus of their study, these 6 patterns show notable variation within the PDs. For example, in the high substance abuse-high PTSD group, 65% are diagnosed with Borderline PD, whereas only 18% of the low substance abuse-low PTSD group meets this diagnosis. These data suggest that the trajectory of PTSD is differentially correlated with the PDs.

While these subtyping attempts have been a valuable contribution to the literature, two problems limit the generalizability of these findings. First, all of these studies rely exclusively on self-report measures. While relying on a single rater is never ideal, it is particularly problematic when attempting to explain personality types. A substantial body of research studying self and peer reports of personality variables suggests that correlations between the two are small to moderate (Clifton, Turkheimer, & Oltmanns, 2003; Klonsky, Oltmanns, & Turkheimer, 2002;

Oltmanns, Feidler, & Turkheimer, 2004; Oltmanns, Melley, & Turkheimer, 2002; Oltmanns, Turkheimer, & Strauss, 1998) and that peer reports are more strongly associated with outcome variables (e.g., discharge from the military; Fiedler, Oltmanns, & Turkheimer, 2004).

Second, these studies have focused exclusively on two important populations, combat veterans and sexual assault survivors. The selection of these two populations may miss important subtypes found in more wide-ranging samples.

Subtyping Using the SWAP-II

The Shedler-Westen Assessment Procedure, 2nd ed (SWAP-II) offers an alternative to the studies above. Instead of relying on self-report, The SWAP-II is a Q-sort requiring a clinically skilled observer to sort 200 personality statements (e.g., "tends to be controlling") in piles from 0 (not descriptive) to 8 (most descriptive; Shedler & Westen, 1998; Thompson-Brenner & Westen, 2005; Westen & Shedler, 1999a, 1999b).

For the purposes of identifying diagnostic groupings or subtypes, SWAP-II data are typically analyzed using Q-factor analysis (also called inverse factor analysis), which has been used effectively in studies of normal personality (Block, 1978; Caspi, 1998; Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996) as well as in studies of personality disorders (Russ, Shedler, Bradley, & Westen, 2008; Shedler & Westen, 2007; Westen & Harnden-Fischer, 2001; Westen & Shedler, 1999b; Westen, Shedler, Durrett, Glass, & Martens, 2003). Whereas conventional factor analysis identifies items that share a common underlying dimension (i.e., a common factor or trait) across patients, Q-factor analysis as applied to personality data identifies patients who share a core personality style or constellation (i.e., patients who have similar profiles across items). A virtue of Q-factor analysis in this respect is that, like conventional

factor analysis, it does not assume multidimensionality; it can as readily identify a unidimensional as a multidimensional construct if unidimensionality better characterize the data. Nor does Q-factor analysis assume discrete types; rather, it generates latent constructs that can be understood as prototypes or ideal types that any given patient may resemble to a greater or lesser degree, with questions about categorical or taxonic status determined subsequently using procedures such as taxometric or latent class analysis (Waller & Meehl, 1998).

Recently, our research group has used this approach to develop subtypes of Axis I disorders using the SWAP-II. For example, this approach has been used to derive personality subtypes of eating disorders (Hershenberg, Novotny, & Westen; Thompson-Brenner & Westen, 2005), ADHD (Levin, Bradley, & Westen, 2008), and panic disorder (Powers & Westen, 2009) in a large national sample of adult patients currently in treatment. Subtypes found in these studies demonstrated external validity, predicting variables such as Axis I and Axis II comorbidity, adaptive functioning and etiology, suggesting this may be a useful method for subtyping other disorders.

I use this approach here in three studies. The first uses Q-factor analysis to identify PTSD subtypes in a national sample of adult outpatients currently in psychotherapy. The second study takes the subtypes derived in Study 1 and validates them in a sample of participants recruited as part of a study examining genetic and environmental predictors of PTSD in inner-city Atlanta. The final study adds a developmental perspective by deriving subtypes in a national sample of adolescent outpatients. Each study is described separately with a brief discussion section for each study, followed by a longer discussion of the three studies and their implications.

Study 1

Sample

As part of an NIMH-funded project on the classification and diagnosis of personality pathology, we contacted a random national sample of psychiatrists and psychologists with at least 5 years experience post-residency (M.D.s) or post-licensure (Ph.D.s) from the membership registers of the American Psychiatric and American Psychological Associations. Participating clinicians received a consulting fee of $200 for a procedure that required approximately 2 hours of time.

We asked clinicians to describe "an adult patient you are currently treating or evaluating who has enduring pattern of thoughts, feeling, motivation or behavior—that is, personality patterns—that cause distress or dysfunction." To obtain a broad range of personality pathology, we emphasized that patients need not have a personality disorder (PD) diagnosis. Patients had to meet the following additional inclusion criteria: $\geq$ 18 years of age, not currently psychotic, and known well by the clinician (using the guideline of $\geq$ 6 clinical contact hours but $\leq$ 2 years, to minimize confounds imposed by personality change with treatment). To minimize selection biases, we directed clinicians to consult their calendars to select the last patient they saw during the previous week who met study criteria, regardless of setting (e.g., private practice, inpatient unit). In a follow-up, over 95% of clinicians reported following these procedures as instructed. Each clinician contributed data on only one patient, to minimize rater-dependent variance. Clinicians were given the option of participating on paper or on a password-protected internet site.

Measures

Clinical Data Form (CDF): The CDF is a clinician-report form developed to assess a range of variables relevant to demographics, diagnosis, and etiology (e.g., Westen & Shedler, 1999a), including a checklist of Axis-I diagnoses such as depression and PTSD (on which clinicians were instructed to make judgments conservatively, listing diagnoses as absent rather than present unless they were certain patients met criteria for the disorder, to minimize false positives). Clinicians rated the patient's adaptive functioning (broadly defined as a person's ability to interact with the world across a variety of settings such as with friends, at work, etc.) as well as developmental and family history variables with which clinicians who have met with a patient over a number of hours are likely to be familiar (e.g., history of foster care, family history of criminality). In prior studies, clinicians' judgments on these variables have predicted theoretically relevant criterion variables and reflected reasonable (and conservative) decision rules (e.g., Russ, Heim, & Westen, 2003; Wilkinson-Ryan & Westen, 2000). A study recently completed shows high convergence between clinician-rated CDF variables and the same variables rated by self-report (DeFife, Drill, Nakash, & Westen, in press).

Shedler-Westen Assessment Procedure-II (SWAP-II): The SWAP-II is the latest version of the SWAP-200, which has been used in a number of taxonomic studies (Shedler & Westen, 2007). The SWAP-II is a set of 200 personality-descriptive statements, each printed on a separate index card. To describe a patient, a clinically experienced observer sorts the statements into eight categories, from those that are least descriptive of the patient (assigned a value of 0) to those that are most descriptive (assigned a value of 7). The instrument is based on the Q-sort method, which requires clinicians to arrange items into a fixed distribution (Block, 1978).

The SWAP-II item set subsumes Axis II criteria included in DSM-III through DSM-IV. Additionally, it incorporates selected Axis I criteria relevant to personality (e.g., anxiety and depression), personality constructs described in the clinical and research literatures over the past 50 years, and clinical observations from pilot studies. The original SWAP-200 item set was the product of a seven-year iterative item revision process; similarly, the SWAP-II was revised to accommodate new findings, clarify existing item content, minimize item redundancy, etc. An increasing body of research supports the validity and reliability of the adult and adolescent versions of the SWAP in predicting a wide range of external criteria, such as suicide attempts, history of psychiatric hospitalizations, ratings of adaptive functioning, interview diagnoses, and developmental and family history variables (e.g., Shedler & Westen, 2007; Westen & Muderrisoglu, 2006; Westen & Weinberger, 2004).

Axis II Checklist: To maximize accuracy of clinicians' DSM-IV PD diagnoses, we presented clinicians with a randomly ordered checklist of the criteria for all Axis II disorders. In prior studies, this method has produced results that mirror findings based on structured interviews (Morey, 1988; Westen, et al., 2003). To generate DSM-IV dimensional diagnoses, we summed the number of criteria met per disorder.

Hypotheses

Previous research described above suggests that there will likely be at least three subtypes: Externalizing, Internalizing, and Resilient. Additionally, because the SWAP-II avoids the limits of self-report discussed above, it may identify additional subtypes characterized by items people tend not to accurately self-report, such as obsessionality (Bradley, Hilsenroth, Guarnaccia, & Westen, 2007), or that are not included on self-report measures, such as items

identifying mental processes of which people are often unaware or unable to rate accurately. Additional subtypes may also be present due to the broad national sample of PTSD patients in this study vs. the focus on specific populations of previous literature.

Study 1 Results

The total sample included 1201 participants, of whom 193 were diagnosed with PTSD on the CDF. Of those diagnosed with PTSD, 75% were female and mean age was 44 (*SD* = 14.01); 80% identified as Caucasian, 7% African-American, 7% Hispanic, and 6% were from a range of other ethnic and racial groups. GAF scores indicated a moderately impaired sample (*M* = 52.76, *SD* = 9.59). The participants had been in treatment an average of 19.76 months (*SD* =25.17). Whereas data were not collected systematically regarding type of trauma except in childhood (physical and sexual abuse), several variables on the CDF are relevant: 41.5% of the sample reported attempting suicide at least once, 31.6% reported at least one adult rape, 33.7% reported being the victim of an abusive relationship as an adult, 42.5% reported childhood physical abuse, 54.4% report childhood sexual abuse, and 35.8% report witnessing domestic violence. These data suggest a high level of interpersonal trauma.

Analysis proceeded along two steps. First, Q-factor analysis was used to identify subtypes of patients diagnosed with PTSD. Second, the validity of these Q-factors was examined using external criterion variables including Axis I and Axis II comorbidity, adaptive functioning, and developmental variables that should differ if a taxonomic distinction is valid (Robins & Guze, 1970).

As noted above, Q-factor analysis is computationally identical to conventional factor analysis except that people rather than items are factored and hence grouped together. We used

standard exploratory factor analysis (EFA) procedures, beginning with a principal components analysis using Kaiser's criteria (Eigenvalues >1) and used the scree plot, percent of variance accounted for, and parallel analysis to select the number of factors to rotate.

We retained all 5 of the 5 factor Promax (oblique) solution with Principal Axis Factoring, although we obtained similar structures using different algorithms and estimation procedures. Table 1 lists the top 18 items (items in the top 2 piles of the SWAP, ranked a 6 or 7 on average on a 7-point scale) of each Q-factor. The Q-factors showed negative to small correlations (r = -.52 to .24), suggesting that they do in fact represent distinct constellations, although we do not assume that they are taxonic (i.e., they represent constellations of personality features that any given patient can match to a greater or lesser degree).

The first three subtypes we found resembled subtypes shown in previous studies. The first subtype we labeled Externalizing Dysregulated. People who matched this subtype appeared similar to externalizing subtypes found in previous research but showed more emotional dysregulation characteristic of Borderline PD. In addition to being angry and impulsive, people who matched the Externalizing Dysregulated subtype had difficulty regulating emotions and tended to experience emotions that spiral out of control. The second subtype we labeled Internalizing. People who matched this subtype tended to feel depressed, anxious, and had representations of self as a bad or damaged person. The third subtype we labeled Resilient and has been well represented in previous research. People who matched this subtype had PTSD but also showed a number of psychological strengths, such as the ability to take another person's perspective and overall good interpersonal skills.

The final two subtypes have not emerged in previous subtyping attempts. The fourth subtype we labeled Dependent. People who matched this subtype shared features with

Dependent PD. In addition, people matching this subtype were notable for items not found in the Dependent PD criteria, such as a tendency to become attached to emotionally unavailable partners and to enter into and stay in abusive relationships.

The final subtype we labeled Obsessional, which represented a ruminative, constricted personality. People who matched this subtype had little psychological insight, tended to become ruminative and absorbed in details and overly concerned with order and organization.

A valid taxonomy should show correlates external to the grouping variables (in this case, SWAP-II items) that distinguish patients classified differently (Livesley, Jackson, & Schroeder, 1992; Robins & Guze, 1970), in this case, types of PTSD patients. To provide preliminary data on the validity of these subtypes, we correlated each participants' Q-factor score on each of the five subtypes with variables in four classes: 1) Axis II comorbidity was treated dimensionally, defined by the number of symptoms of each disorder endorsed on a randomly ordered list of all DSM-IV Axis II symptoms, 2) Axis I comorbidity was treated categorically and defined by additional Axis I diagnoses endorsed on the CDF, 3) developmental criteria such as adverse childhood events, attachment disruptions, childhood environment, and childhood trauma, and 4) adaptive functioning variables. Several developmental and adaptive functioning variables are composites. The composite variables were aggregated variables (created by taking the mean of the standard deviation of several individual variables) to maximize reliability (e.g., a composite measure of global adaptive functioning, including Global Adaptive Functioning ratings, degree of personality disturbance, quality of friendships, quality of romantic relationships, and social support, rated on 5-point or 7-point scales, with all variables first Z-scored for standardization of metrics before aggregating). See Appendix B for complete list of variables included in the composite variables.

Validity Hypotheses

After identifying the subtypes but prior to examining their relationship to criterion variables, we made the following a priori predictions by subtype (predicted relationships are bolded in Table 2): 1) The Externalizing Dysregulated subtype would correlate with the Cluster B personality disorders, substance abuse on Axis I, childhood adversity, and poor adaptive functioning. We predicted the association with childhood adversity based on prior research described above and with poor adaptive functioning because externalizing behavior tends to create problems across domains of functioning including close relationships and employment. We also predicted a specific association with a composite measure of childhood psychopathy predictors that we expected to differentiate patients with high scores on this subtype from others with poor adaptive functioning on other indices. 2) The Internalizing subtype would correlate with Avoidant Personality Disorder, Major Depressive Disorder (MDD), Panic, GAD, and Social Phobia, and would show poor global adaptive functioning. These Axis I predictions were based on the anxious, depressed presentation found in the subtype items. The poor adaptive functioning was predicted based on the tendency of chronically anxious/depressed patients to have substantial difficulty navigating the world. 3) The Resilient subtype would show low correlations with Axis I or Axis II and show good adaptive functioning, as would be expected given the number of SWAP-II health items defining this subtype. 4) The Dependent subtype would be associated with Dependent Personality Disorder, with the victimization composite variable (being the victim of a violent crime, being in an abusive relationship), and with poor adaptive functioning. 5) The Obsessive subtype would be associated with adaptive functioning higher than the other pathological subtypes but lower than resilient. This is based on the fact that

virtually all research on OCPD has shown it not to have the characteristic negative association with adaptive functioning as the other personality disorders (see Blagov, Bradley, & Westen, 2007).

Validity Results

Table 2 describes correlations between the subtypes and the external criterion variables organized into four categories: Axis II disorders, Axis I disorders, developmental variables, and adaptive functioning variables. As can be seen in Table 2 below, the pattern of correlations was largely as expected.

As we hypothesized, the Externalizing Dysregulated subtype showed significant correlations with all the Cluster B personality disorders on Axis II. On Axis I (where disorders were code 0/1), this subtype showed almost zero correlations with depression or other anxiety disorders but had a significant correlation with substance abuse ($r = .21$, $p < .01$). Of all the subtypes, the Externalizing Dysregulated subtype had the strongest associations with the developmental variables, showing significant associations with adverse childhood events (a broad aggregate variable including events ranging from abuse to having an alcoholic in the home; $r = .17$, $p < .05$), attachment disruptions (such as moving frequently; $r = .21$, $p < .01$), and childhood psychopathy predictors (including setting fires, violence, and torturing animals; $r = .20$, $p < .01$). On the adaptive functioning variables, externalizing behavior (a composite of arrests, violent crimes, and perpetration of abuse) was highest in the Externalizing Dysregulated subtype ($r = .33$, $p < .01$).

The Internalizing subtype correlated significantly with only one disorder on Axis II, Avoidant PD ($r = .43$, $p < .01$). The Internalizing subtype showed significant correlations with

Depression (r= .26, p < .01), Panic (r = .17, p < .05), and Social Phobia (r = .23, p < .01). Of all of the developmental and adaptive functioning variables, only the negative association with the global adaptive functioning composite was significant. The significant negative correlation with the externalizing composite also suggested good discriminant validity.

As expected, the Resilient subtype showed no significant positive correlations with Axis I or Axis II disorders. This subtype did show significant positive correlations with the childhood family environment composite (r = .17, p < .05) in addition to the family stability (r = .18, p < .05) and family warmth (r = .17, p < .05) variables. Finally, the Resilient subtype had the most successful employment history, as indexed by its high correlation with the employment composite (lost jobs and employment history) (r= .50, p < .01).

The Dependent subtype showed significant correlations with Dependent PD and with Histrionic personality disorders. The correlation with Dependent PD was expected and is explained above. The correlation with Histrionic PD reflects the tendency to attach quickly or intensely, and develop feelings not warranted by the context of the relationship. This subtype did not show any significant correlations with Axis I disorders. There was a small but significant correlation with the adverse childhood events composite. Finally, victimization (a composite of number of rapes and being the victim of adult abuse) was highest in the Dependent subtype (r = .30, p < .01), as predicted.

The Obsessional subtype correlated as expected with Obsessive-Compulsive Personality Disorder (OCPD; r = .35, p < .01). The Obsessional subtypes also did not significantly correlate with any of the Axis I disorders. Of particular note are significant positive correlations with the childhood family environment composite (r = .30, p < .01) and family warmth (r = .24, p < .01) and stability (r = .30, p < .01) variables.

Discussion

This study offers strong preliminary evidence of five personality derived subtypes of PTSD, described briefly here and in more detail in the overall discussion below. The first subtype, Externalizing Dysregulated, was defined by anger and emotional reactivity. The second subtype, Internalizing, was defined by depression, guilt, passivity, and shame. The third subtype, Resilient was defined by psychological strengths such as conscientiousness and empathy in the context of some anxiety and depression. The fourth subtype, Dependent, was defined by fear of rejection, a tendency to get drawn into abusive relationships, and feelings of helplessness. The final subtype, Obsessional, was defined by rumination, emotional constriction, and a tendency to be overly concerned with rules and organization and become unnecessarily absorbed in details.

By recruiting through a national practice network we were able to gather personality data from clinically expert observers with an average of nearly 20 years experience on a large and diverse number of patients diagnosed with PTSD. The use of quantified clinical judgment using the SWAP-II (Westen & Weinberger, 2004) allowed us to avoid the biases inherent in self-report measures of personality such as difficulty seeing negative personality traits in oneself (Clifton, Turkheimer, & Oltmanns, 2005). This approach, combined with validity data on relevant developmental and adaptive functioning variables, resulted in profiles of the three previously identified subtypes that identified some characteristics of these subtypes not found in previous studies (e.g., the emotional dysregulation in the Externalizing Dysregulated Subtype) in addition to the two subtypes not previously identified. The descriptions of these 5 subtypes should be seen as complementary to previous approaches, providing an additional perspective from expert observers on an important phenomenon.

Moreover, this study demonstrated initial convergent and discriminant validity by showing that subtypes correlated with external variables that theoretically should relate to the subtypes and did not correlate with variables that should not relate to the subtypes. For example, the Externalizing Dysregulated subtype was significantly correlated with Substance Abuse but not Major Depressive Disorder. If these subtypes represent true variations in PTSD, they should show similar patterns of correlations across traumatized populations and when different observers provide the data on their personality styles and variables used for construct validation. Study 2 tested this hypothesis.

Limitations

The primary limitation of this study is its reliance on a single informant per patient, which can introduce a number of biases. Ideally, patients would be diagnosed with Axis I disorders by one observer using a structured interview and assessed using the SWAP-II for personality variables by another. Several factors, however, limit this concern. First, this study is similar to the modal study of PDs, which relies primarily on a single informant, the patient, whether by structured interview or questionnaire. Second, and most importantly, unlike patient self-reports, which show low correlations with informant-reports, SWAP scale scores obtained by clinician-report correlate highly (on average, r = .70-.80) with the same scales assessed independently by interview (Westen & Muderrisoglu, 2006), suggesting that if clinicians' diagnostic biases are influencing their judgments, these biases are not accounting for much variance. Third, in a host of studies, we have been unable to detect evidence of biases associated with either professional training or theoretical orientation. For example, in two investigations of highly theory-laden constructs (transference and countertransference), data from psychoanalytic

and cognitive-behavioral clinicians yielded virtually identical factor structures (Betan, Heim, Zittel, & Westen, 2005; Bradley, Heim, & Westen, 2005b), suggesting that clinicians, like other observers, are capable, within the limits of all human information processing, of making valid and reliable observations if given instruments with appropriate psychometrics and items written with a minimum of jargon. Additionally, a recent paper finds that clinicians' ratings of adaptive functioning, axis I pathology, and developmental history correlated strongly with patient ratings of the same variables (DeFife, et al., in press). Finally, Study 2 addresses limitation of a single informant by also gathering information from a second informant, the patient.

Study 2

Sample

Data for Study 2 were collected as part of a larger study investigating the roles of genetic and environmental factors in predicting PTSD diagnosis in a population with low socioeconomic status (SES): primarily African American adults present in the waiting rooms of the primary care clinic and obstetrical-gynecological clinic of an urban, public hospital in Atlanta, GA. Research participants were approached while either waiting for their medical appointments or while waiting with others who were scheduled for medical appointments. Eligibility requirements included ability to give informed consent and to respond to interview questions. An initial screening interview was conducted in hospital clinic waiting rooms at the time participants were recruited.

The initial screening involved completion of a 45-75-minute battery of self-report measures in a sample of 1224 participants. The length of the screening interview was dependent in large part on the extent of the participant's trauma history and symptoms. In all study

evaluations, we read instruments to participants because of relatively poor literacy levels. A subset of participants were also scheduled for a more comprehensive assessment in which they completed more extensive interview based assessment of trauma exposure, history of childhood abuse, PTSD symptoms as well as other biological and psychiatric assessments. This included the administration of the Clinical Diagnostic Interview (CDI), from which interviewers completed the SWAP-II (*N*= 243).

One limitation of Q-factor analysis, like other cluster-analytic methods, is that confirmatory factor analysis is impossible (because people are being grouped instead of items, which would require the confirmatory sample to include the same subjects, not items). However, an alternative method for validating Q-factor analysis and related procedures is to evaluate the validity of the subtypes in a second sample. As described above, the present sample has several characteristics that differed from Study 1: 1) the SWAP-II scores are based on standardized interviews by trained interviewers, rather than by the patient's treating clinician; 2) patients were carefully diagnosed with PTSD by an independent interviewer; 3) additional criterion variables for convergent and discriminant validity were provided by a different informant than the interviewer who coded the SWAP-II (i.e., the personality disorder diagnoses are derived from a self-report personality measure); and 4) the validation sample was demographically quite different from the subtype derivation sample, consisting of inner-city, low SES, primarily African-American non-psychiatric patients. Thus, if the subtypes derived in Study 1 demonstrate a consistent pattern of correlations in Study 2, these data would represent strong evidence of validity.

Measures

CDF: See Study 1

SWAP-II: See Study 1

Demographics Screening Instrument (DSI): The DSI obtains basic demographic data including race/ethnicity, age, marital status, income, current living situation and level of education. Other data gathered with this instrument include self-reported history of suicide attempts, psychiatric hospitalizations, and lifetime alcohol/substance use related problems (all coded as 0=absent, 1=present).

Clinician-Administered PTSD Scale (CAPS) –The CAPS is a structured interview for assessing PTSD symptoms according to DSM-IV, (Blake et al., 1990) criteria. It assesses the frequency and intensity of each symptom using standard prompt questions and explicit, behaviorally-anchored rating scales. Each of the 17 DSM-IV PTSD symptoms is rated on a scale of 0, low, to 4, high, for both frequency and intensity. A PTSD symptom was rated as present when an item is rated with a frequency of 1 (once a month) or higher and an intensity of 2 (moderate) or higher. To obtain a PTSD diagnosis, severity scores were dichotomized at the item level, creating a present or absent rating for each symptom and following the DSM-IV diagnostic algorithm, (Weathers, Meron, & Keane, 1999).

Structured Clinical Interview for DSM-IV (SCID-I)- The SCID-I is a semi-structured interview which asks the subject about each DSM-IV Axis I symptom from which diagnoses are derived (First, Spitzer, Gibbon, & Williams, 1995).

Schedule for Non-Adaptive Personality (SNAP)- The SNAP is a 425 item self-report personality inventory with a good reliability and validity (Clark, 1993; Linde, 2002; Linde & Clark, 2003; Melley, Oltmanns, & Turkheimer, 2002).

Beck Depression Inventory, 2nd Ed (BDI-II)*:* The BDI-II is a 21 item self-report measure of depression. Each item is rated on a 4 point scale from 0-3. Items are then summed to yield a continuous total score measure the severity of depression symptoms (Beck, Steer, & Brown, 1996).

Childhood Trauma Questionnaire (CTQ): The CTQ (CTQ; Bernstein & Fink, 1998) is a 28-item validated self-report measure of child maltreatment . The CTQ yields a total continuous score as well as subscale scores. In this paper we focus on data from the physical, sexual, and emotional abuse subscales.

Analyses

Among participants for whom we had SWAP data (*N*= 243), 91 met current or lifetime CAPS criteria for PTSD. A CAPS score of 70 is generally considered to be diagnostic of PTSD (Weathers, Keane, & Davidson, 2001) and predicts DSM-IV diagnosis of the disorder. This stringent inclusion criterion was used to address one of the primary limitations of Study 1, the lack of a standardized diagnostic measure of PTSD. Other Axis-I diagnoses were assessed using the SCID-I by the same rater who completed the CAPS. Of the 91 participants, 52% were female and mean age was 44 (*SD*= 11.28); 4% identified as Caucasian, 81% African-American, 1% Hispanic, and 14% were from a range of ethnic and racial groups.

The 91 participants were assigned scores for each of the personality prototypes identified in Study 1 using Q-correlations (Block, 1968), by correlating their 200-item SWAP-II profiles

with the empirically identified Q-factors from Study 1. This created dimensional scores on the five subtypes found in study for all participants. We then correlated these dimensional scores with external criterion variables in the same categories as used in Study 1, using the same predictions for validity analysis as Study 1. As noted above, we address one limitation of Study 1 by collecting comorbidity data using separate raters: Axis I data come from a separate interviewer administering the SCID-I (except where noted, e.g., the BDI, which was obtained by self-report) and Axis II data come for the subject completing the SNAP. This results in an advantage of Axis II ratings coming from a different rater but may result in significantly smaller correlations with subtypes given the limitations of self-report personality measures described above, particularly for personality variables, for which correlations between structured interviews and self-reports tend to hover between 0.0 and .30. Developmental and adaptive functioning variables are identical to Study 1 and are scored from the CDF.

Results

Overall, the pattern of correlations found in Study 2 supported the findings from Study 1, with some variation across subtypes. Subjects who matched the Externalizing Dysregulated subtype showed the most consistent pattern across studies. The Externalizing subtype correlated significantly with alcohol and cocaine abuse but not marijuana abuse (the three substance use disorders on which we had enough subjects with positive diagnoses to render analyses possible). As in Study 1, subjects who matched this subtype showed a significant correlation with childhood predictors of psychopathy (e.g., setting fires, hurting animals, violence; ($r = .31$, $p < .01$). As in Study 1, the Externalizing Dysregulated subtype described subjects with the worst

adaptive functioning of all five subtypes (e.g., Global Adaptive Functioning Composite, r = -.46, p < .01).

Subjects who matched the Internalizing subtype did not show associations with Avoidant PD or MDD but did show similar correlations to Study 1 with Panic Disorder (r = .29 p < .05) and Schizoid PD (r = .22, p < .01). Additionally, despite not endorsing the full criteria of MDD on the SCID-I, the Internalizing subtype significantly correlated with a dimensional measure of depression, the BDI (r = .35, p < .01), suggesting a coherent Internalizing subtype across samples.

The Resilient subtype replicated well, showing no associated comorbidity, and high adaptive functioning (Global Adaptive Functioning Composite, r= .58, p < .01).

The Dependent subtype demonstrated predicted association with Dependent PD (r= .22, p < .05) and an association with MDD that did not appear in Study 1 (r = .25, p < .05). Additionally, the Dependent subtype was the only subtype to show correlations with types of trauma on the CTQ, a self-report measure asking about various forms of abuse in childhood. This subtype was significantly correlated with emotional abuse, sexual abuse, and total CTQ scores, but not physical abuse. (e.g., CTQ total score, r = .25, p < .05). For the adaptive functioning variables, as in Study 1, the Dependent subtype was significantly correlated with poor Global Adaptive Functioning.

The Obsessional subtype did not show a consistent pattern across studies, but appeared much closer to the Resilient subtype than the other more pathological subtypes. This is consistent with the relatively good adaptive functioning OCPD patients show in other PD research (e.g., McGlashan et al., 2000). The expected correlation with OCPD was not significant, indicating this may not be a stable factor or may not be a common subtype in an inner-city African-

American non-psychiatric sample. Alternatively, the criterion variables for all Axis II variables in this study were self-reports, and patients may not reliably report OCPD symptoms on the SNAP. This final explanation may be the most likely given the low correlations between self-report and other report OCPD symptoms in previous research (Clifton, et al., 2003).

Discussion

This study provides additional support for the validity of the Externalizing Dysregulated, Internalizing, Resilient, and Dependent subtypes. All four showed consistent patterns of correlations with external criterion variables across two extremely different samples, suggesting they may be robust subtypes of Adult PTSD. The Externalizing Dysregulated subtype showed a consistent pattern of correlations between Study 1 and Study 2 on Axis I, Axis II comorbidity as well as developmental and adaptive functioning variables. Across the first two studies this subtype was associated with childhood psychopathy predictors, suggesting that externalizing behavior began from an early age, and low family warmth, suggesting a cold, distant upbringing.

The Internalizing subtype also showed a pattern consistent with Study 1, including significant associations with Schizoid PD and Panic disorder. Expected associations with Avoidant PD, MDD, and Social Phobia that appeared in Study 1 did not, however, appear in Study 2. This somewhat decreased comorbidity, combined with an overall higher Global Adaptive Functioning Composite, suggests the Internalizing subtype may have been somewhat higher functioning in the sample in Study 2. However, the significant association with high BDI scores, combined with the Schizoid PD and Panic disorder relationships, indicates a coherent subtype with significant internalizing difficulties.

The Resilient subtype was quite similar to Study 1, with no Axis I or Axis II comorbidity, positive family stability and warmth, and good adaptive functioning.

Results for the Dependent subtype showed some correlations with expected variables (including Dependent PD and poor adaptive functioning). The Obsessional subtype correlated significantly with Schizoid PD but the other correlations reported in Study 1 were not significant in Study 2. Whether the Dependent and particularly the Obsessional subtypes are in fact true subtypes but underrepresented in this sample or whether they show less validity in this sample due to the differing methods (particularly of assessing personality) is a question for future research.

Limitations

Study 2 resolved many of the limitations of Study 1, including a more rigorous assessment of PTSD and trauma history. Also included were external criterion variables completed by a different rater than the person who completed the SWAP. However, one limitation of this study was the relatively low *N*. Furthermore, it would have been valuable to examine genetic and biological variability among participants in this study to further provide evidence variation among PTSD subtypes; unfortunately, the sample size did not allow for this analysis, but is recommended for future research.

Study 3

Sample

Similar to Study 1, data were collected as part of a larger project that recruited a random national sample of psychiatrists and psychologists to complete a battery of measures on a

randomly selected patient aged 13-18. Data were collected on 950 adolescents. We obtained a stratified random sample, stratifying on age (13-18) and gender. Exclusion criteria were chronic psychosis and mental retardation. In the present study we analyzed a subset of 114 adolescents who clinicians diagnosed with PTSD. We asked clinicians to describe "an adolescent patient you are currently treating or evaluating who has enduring pattern of thoughts, feeling, motivation or behavior—that is, personality problems—that cause distress or dysfunction." To obtain a broad range of personality pathology, from relatively minimal to substantial, we emphasized that patients must have problematic personality traits but need not have a PD diagnosis. To avoid biasing the sample one way or another, we instructed clinicians to disregard the caveats in the DSM-IV regarding the application of Axis II diagnoses to adolescents and to simply select a patient with any degree or form of personality pathology as defined above.

Measures

Shedler-Westen Assessment Procedure for Adolescents, Version II (SWAP-II-A). The SWAP-II-A is the revised version of the SWAP-200-A for adolescents (Westen, Dutra & Shedler, 2005; Westen et al., 2003). Designed for use by clinically experienced observers with longitudinal treatment information or results of a diagnostic interview of the patient and parents, the SWAP-II-A is a 200-item personality and personality pathology Q-sort (Westen & Muderrisoglu, 2003).

Clinical Data Form for Adolescents (CDF-A). The CDF-A is the adolescent version of the CDF described above. It assesses a range of variables relevant to demographic, diagnosis, and etiology through clinician-report (Westen & Shedler, 1999; Westen et al., 2003). Clinicians were first asked to provide demographic data for themselves and the patient. Next, clinicians

rated patients' adaptive functioning via indices such as ratings of school performance and peer relations, as well as relatively objective indicators such as history of arrests, suicide attempts, and psychiatric hospitalizations. Clinician ratings of adaptive functioning variables demonstrate high interrater reliability and validity (e.g., correlations with the same data obtained by independent interview $r > .60$; Westen et al., 1997). Additionally, the CDF assessed the patients' developmental and family history, which clinicians are likely to be familiar with after meeting with adolescents and their parents for several sessions.

Axis-II Checklist: See Study 1.

Hypotheses

We expected the Externalizing Dysregulated, Internalizing, and Resilient subtypes to replicate in the adolescent sample. The Dependent and Obsessive subtypes likely represent personality constellations not yet fully developed and we do not expect those to replicate. We expect correlations for the subtypes that do replicate to be similar to those seen in Study 1.

Results

The adolescents from the larger sample diagnosed with PTSD (N= 114) were 71.9% female with an average age of 15.46 (SD = 1.62). The sample was composed of 66.6% Caucasian participants, 15.8% Hispanic, 10.5% African-American, and 7.1% identifying as other races/ethnicities. Although comprehensive data about specific traumatic events (particularly non-interpersonal traumas) were not collected, 45% of clinicians endorsed childhood physical abuse and 50% endorsed childhood sexual abuse, indicating high rates of childhood interpersonal trauma. The average age of onset of PTSD symptoms was 10.43 years (SD = 3.76).

Data analyses were performed in two steps similar to Study 1. First, we applied Q-factor analysis to the SWAP data using standard EFA procedures, beginning with a principal components analysis using Kaiser's criteria (Eigenvalues >1) and used the scree plot, percent of variance accounted for, and parallel analysis to select the number of factors to rotate. We retained 4 of the 5 factor Promax (oblique) solution with Principal Axis Factoring (see Table 4 below), although we obtained similar structures using different algorithms and estimation procedures.

We labeled the 4 subtypes Externalizing Dysregulated, Internalizing, Resilient, and Impulsive. See Table 4 for the top 18 SWAP-II-A items for each subtype (i.e., the items in the top two piles). The second column under each factor is the Q-factor score for that item. The first three subtypes appeared similar to their adult counterparts. The Impulsive subtype described a teenager who has an unstable sense of self, feels empty and depressed, and copes with these feelings by abusing substances, self-harming, and becoming sexually promiscuous.

Next, as in Studies 1 and 2, to examine the external criterion validity of these subtypes, we correlated subtypes with criterion variables. For the first three subtypes, hypotheses were largely the same as in Study 1. For the Impulsive subtype, we predicted correlations with the Cluster B disorders on Axis-II and substance use on Axis-I.

The Externalizing Dysregulated subtype correlated with Antisocial ($r = .48$, $p < .01$) and Histrionic ($r = .30$, $p < .01$) PDs but did not show other expected correlations with the other Cluster B PDs. On Axis I, the Externalizing Dysregulated subtype showed significant correlations with Attention-Deficit Hyperactivity Disorder ($r = .36$, $p < .01$) and Oppositional Defiant Disorder ($r = .29$, $p < .05$), both disruptive disorders of childhood on the externalizing

spectrum, but not with Substance Use. As expected, this subtype also significantly correlated with poor adaptive functioning (r = -.30, p < .01).

The Internalizing subtype correlated with Avoidant PD (r = .33, p < .05) but showed no other significant correlations. This pattern, including the lack of Axis I comorbidity, suggests a subtype closer to that found in Study 2 than Study 1. For adaptive functioning variables, the Internalizing subtype showed the expected negative correlation with the Externalizing Composite, although its negative correlation with global adaptive functioning was not significant.

As in Studies 1 and 2, the Resilient subtype showed no comorbidity on Axis I or Axis II, despite tending to be angry and depressed at times. The only significant correlation was with a positive childhood environment. Again, this finding is consistent with Studies 1 and 2, which found a warm, stable environment associated with the Resilient subtype. However, correlations with positive adaptive functioning were not significant.

The Impulsive subtype showed significant correlations with Borderline (r = .57, p < .05) and Histrionic (r = .45, p < .05) PDs. The correlation with Substance Abuse on Axis I was not significant but trended in the expected direction. None of the composite or adaptive functioning variables were significantly associated with this subtype.

Discussion

Study 3 suggests that the first three subtypes identified in the adult samples are present as early as the teenage years. The first subtype, Externalizing Dysregulated was very similar to the adult subtype: it described an angry, emotionally dysregulated adolescent who can be quite reactive when strong emotions are stirred up. The second subtype, Internalizing, described an

adolescent who tends to be depressed, and to be disturbed by feelings of guilt and helplessness. The third subtype, Resilient, described an adolescent who, despite struggling with PTSD, is largely psychologically healthy, has good relationships and a good sense of humor, although struggles with depression and anger. Thus, as in the first two studies, Study 3 provided additional evidence for the validity of these three subtypes. That these subtypes replicated across all 3 studies indicates that these subtypes likely represent true variability within the PTSD diagnosis. Study 3 also provided preliminary evidence for an additional subtype, Impulsive, not seen in the adult NIHM sample. The Impulsive subtype was defined by a lack of a stable sense of self, painful feelings of emptiness and depression in addition to the impulsive behaviors of substance abuse, self-mutilation, and sexual promiscuity.

The Externalizing Dysregulated subtype appeared most similar to its adult counterpart. The associations with Antisocial and Histrionic PDs described a group of adolescents who tend to experience intense emotions, particularly anger, and act them out in harmful ways. Their difficulty controlling behaviors was associated with ODD and ADHD, likely reflecting the impulsivity characteristic of this subtype.

The Internalizing subtype was only significantly associated with Avoidant PD. The lack of association with MDD and other anxiety disorders may suggest a withdrawn, isolated style that has yet to develop into other Axis I disorders. It may also be that this subtype is somewhat more socially successful, as indicated by better adaptive functioning than its adult counterpart, providing some protection against depression.

The Resilient subtype, as in the two previous studies, showed no comorbidity. This subtype demonstrated no other significant correlations. While the correlation with good global adaptive functioning was in the positive direction, it did not reach significance. This may be due

to a relative lack of mature coping strategies (defenses) in adolescents dealing with the impact of severe trauma.

Finally, the Impulsive subtype showed associations similar to the adult Externalizing Dysregulated subtype, notably correlations with Borderline and Histrionic PDs, indicating that patients matching this subtype had significant difficulty with emotion regulation. On Axis I, the Impulsive subtype was significantly correlated with MDD and had a positive but not significant correlation with Substance Abuse, suggesting substance use may be a way of coping with painful negative affect. Given their similarities, it is likely that this subtype may develop into an Externalizing Dysregulated adult.

The correlations with the Global Adaptive Functioning Composite did not reach significance with the Internalizing, Resilient, or Impulsive subtypes. Because all of the adolescents in this sample have been diagnosed with PTSD, this may be a problem of restricted range. That is, PTSD in adolescents may impair their functioning to a degree such that adding subtypes does not add additional explanatory power for adaptive functioning. It may be that these once these personality subtypes coalesce in adulthood, they have a more substantial impact on the patient's ability to get along in the world.

Limitations

The limitations for Study 3 are largely the same as for Study 1; with the addition that personality is not completely formed during adolescence. It is, however, striking that three of the subtypes replicated across adult and adolescent samples. The lack of a Dependent and Obsessional type may be explained developmentally. Dependency is difficult to assess in

adolescence, as most adolescents live with parents, who are their primary attachment figures, and are by definition dependent. Obsessionality may be a defense against the anxiety that is central to PTSD that is not well developed in adolescents, who are more likely to be impulsive and under-controlled than obsessional and over-controlled. This may also help explain the appearance of an Impulsive subtype as adolescents who have yet to develop more mature defenses (procedures for implicit affect regulation) and attempt to regulate their emotions through substance abuse, self-harm, or sexual promiscuity. Traumatic events may also encourage adolescents to use less mature ways of coping as a way of managing the overwhelming emotions that can result from severe trauma, particularly given the early age of onset of first traumatic experiences in this sample (approximately age 10 on average).

General Discussion

The three studies in this dissertation extend previous subtyping research using a novel measure in three different populations. Together, these studies provide initial support for the reliability and validity of personality subtypes of PTSD. This is the first study to use a personality measure designed for use by expert observers rather than self-reports in three diverse populations to identify subtypes. This discussion reviews the subtypes identified and discusses implications for future research.

Before describing the subtypes, it is important to restate that we are not suggesting that these subtypes are categorical. We suggest instead that one conceptualize these subtypes as prototypes that any individual patient may match to a greater or lesser degree.

Using a national sample of adults with PTSD, Study 1 identified five subtypes. The Externalizing Dysregulated subtype described an angry, often ragefull person who can be

manipulative and controlling. People who strongly match this subtype also feel depressed and empty at times and tend to defend against these feelings by becoming angry. They also tend to feel misunderstood and hold grudges.

The Externalizing Dysregulated subtype shared features with the Cluster B PDs (i.e., Antisocial, Borderline, Histrionic, and Narcissistic), which reflect the anger and difficulty regulating emotions at the core of this subtype. Although anger has been described in previous subtyping attempts, difficulty regulating emotions has not been well represented in previous descriptions of an externalizing subtype of PTSD. This additional finding suggests one advantage of using observations by more experienced observers as well as an item content that includes aspects of self-regulation not included in self-report methods previously used for subtyping.

The Externalizing Dysregulated subtype also shared features with Paranoid and Schizotypal PDs, likely reflecting the suspiciousness and social avoidance associated with PTSD. People in this subtype are likely to report substance abuse difficulties but report few other Axis I disorders. Developmentally, people matching this subtype report unstable childhoods with adverse events such as abuse, as well as attachment disruptions such as losing a parent. They also often have a history of psychopathy predictors (e.g., torturing animals, setting fires, arrests for violence). People who matched the Externalizing Dysregulated subtype are likely to have had poor adaptive functioning, showing lower GAF scores, more arrests, and difficulty working. Overall, the anger and emotional dysregulation characteristics of this subtype create substantial difficulty in multiple domains of life.

The Internalizing subtype described a depressed, anxious, and self-critical person who struggles with feelings of guilt, feels a sense of inner badness, and fears of abandonment. These

intrapsychic processes are not well described in prior subtyping research, which relied on self-reports that did not include these kinds of variables in the items sets and require a level of insight that many PTSD sufferers are unlikely to have, again suggesting the usefulness of data from clinician report.

The Internalizing subtype shared features with Avoidant and Schizotypal PDs, reflecting the tendency to isolate. The Internalizing subtype was notable for negative correlations with the Cluster B PDs, indicating that the depression and self-loathing are unlikely to be masked by anger or narcissism. As expected, this subtype showed significant correlations with MDD, Panic Disorder, and Social Phobia. There was no correlation with GAD, which indicated depressive symptoms might be more central than anxiety symptoms (or that the anxiety characteristic of PTSD may create a restriction of range across the subtypes). The Internalizing subtype showed associations with poor global adaptive functioning and low GAF but no association with specific adaptive functioning variables such as victimization or employment.

The next subtype, labeled Resilient, represents people who show significant psychological strengths despite a diagnosis of PTSD. People who matched the Resilient subtype are described as articulate, conscientious, empathic, and tend to be liked by other people. They are not symptom-free, however, as they tend to be anxious, and feel guilty.

As expected, the Resilient subtype showed no positive associations with either Axis I or Axis II disorders, or with developmental difficulties. Finally, the Resilient subtype correlated with good adaptive functioning including higher GAF scores, better relationships, and stable employment.

Whereas previous subtyping efforts have identified the three subtypes described above, this study was the first to identify two additional adult subtypes in adults. The Dependent

subtype describes a type of patient who fears rejection or abandonment, tends to be drawn into abusive relationships, and tends to feel helpless. People who matched this subtype tend to be passive and have difficulty asserting themselves. They tend to be passive aggressive and blame others for their problems. People who matched the Dependent subtype also tend to fantasize about an ideal relationship while their actual lives are quite chaotic.

As expected, this subtype shares the most features with Dependent PD but also has features of Antisocial, Borderline, Histrionic and Narcissistic, representing a chaotic internal and external world. The Dependent subtype did not show an association with either Paranoid or Schizoid PDs, which may indicate that the desire for attachment, even when it is abusive, overwhelms the tendency to isolate that is characteristic of many people with PTSD. Although we expected an association with depression or dysthymia, this subtype did not show Axis-I comorbidity. This may indicate that interpersonal personality features are more central than mood symptoms in this subtype. People who matched the Dependent subtype did show an association with adverse childhood events indicating a chaotic childhood environment. The Dependent subtype also showed an association with a victimization composite that indicated that people in this subtype are more likely to be in abusive relationships and to be victims of violent crime. The Dependent subtype was the only one of the five to show this association, which suggests that victimization may be a defining feature of this subtype. Whereas Externalizing PTSD patients are more likely to abuse others, Dependent PTSD patients are likely to gravitate toward, or fail to extricate themselves, from abusive relationships or to replicate abuse they experienced as children through self-abuse or failures of self-protection.

The final subtype we labeled Obsessional. People who matched this subtype tended to be ruminative, emotionally constricted, and lack close friendships. Other items at the core of this

subtype indicate strengths such as tending to be conscientious and adhering closely to routines. They tended to be hypochondriachal and express their anxiety through somatic symptoms.

As expected, this subtype shared features with OCPD. The Obsessional subtype also shared features with Schizoid and Schizotypal PDs, consistent with SWAP items describing social isolation and poor social skills. The Obsessional subtype also showed no positive associations with developmental or problematic adaptive functioning variables, indicating that this subtype may describe an overall psychologically healthier group of people than the other pathological subtypes, despite their social difficulties and rigidity.

Study 2 was designed to examine the validity of these subtypes in a demographically different sample. Participants were recruited from the waiting room of a large urban hospital and those who met diagnostic criteria for PTSD were included in this study. Participants SWAP profiles were correlated with the five subtypes from Study 1. As in Study 1, validity analyses were performed using external criterion variables.

These external variables differed from Study 1 in the following ways. Whereas Axis II comorbidity in Study 1 was assessed with a symptom checklist by the same rater who completed the SWAP, in Study 2 Axis II symptoms were assessed using the SNAP, a self-report personality inventory completed by the participant. Thus, while patterns of correlations for Axis II disorders are likely to be similar, they may not be identical given differences between SWAP-II and self-report personality measures and the minimal correlations found over the last 25 years between PDs as assessed by self-report and either structured interviews or any other kind of diagnosis (e.g., lay informant reports; Bradley, et al., 2007; Clifton, et al., 2003; Oltmanns, et al., 2004; Oltmanns, et al., 1998). Axis I diagnoses were assessed by a separate rater using different

instruments than those used in Study 1 (e.g., the SCID-I vs. an Axis I checklist) or by dimensional self-reports. Childhood history variables were also assessed by self-reports.

The Externalizing Dysregulated subtype showed strong evidence of consistency in Study 2 validity analyses. The Externalizing Dysregulated subtype showed similar associations with Antisocial, Borderline, and Paranoid PDs. In contrast to Study 1, correlations with Borderline, Histrionic, and Narcissistic PD symptoms were not significant, whereas correlations with Avoidant and Dependent were significant. This difference could have reflected the difficulty participants have self-reporting those symptoms (Clifton, et al., 2003), but may also reflect a different presentation of this subtype. Developmental and adaptive functioning variables were similar to Study 1. The Externalizing Dysregulated subtype showed expected associations with childhood psychopathy predictors and poor global adaptive functioning, including a tendency toward violent crime and poor employment history.

Study 2 validity analyses showed meaningful coherence for the Internalizing subtype, although results were less clear than for the Externalizing Dysregulated subtype. People matching the Internalizing subtype in Study 2 showed the association with Schizoid PD but not with Avoidant PD. On Axis I, this subtype was significantly correlated with Panic Disorder but did not show predicted correlations with MDD or Social Phobia. One possible reason for this discrepancy may be that people in this subtype, because of their self-criticism and guilt, felt less comfortable reporting these symptoms to a stranger administering the SCID-I (Study 2) than to a therapist they were seeing in treatment (Study 1). This is supported by the significant correlation with BDI score, indicating that people who matched this subtype experience some substantial depressive symptoms.

People who matched the Resilient subtype in Study 2 were similar to those in Study 1. The Resilient subtype showed no Axis I or Axis II comorbidity and demonstrated good adaptive functioning, including stable employment. This indicated, as found in previous research (e.g., Miller, et al., 2008), that a psychologically healthy subtype of PTSD exists across multiple samples.

The Dependent subtype in Study 2 correlated with Dependent PD but not the other Cluster B disorders found in Study 1. This may have been due to a different presentation of this subtype in Study 2, more heavily focused on Dependent features such as fear of rejection or abandonment and less on the emotional dysregulation characteristic of Cluster B. Again, this may have been due to lack of insight into Cluster B symptoms on a self-report inventory. In Study 2 people matching the Dependent subtype showed a correlation with MDD that did not appear in Study 1, but is consistent with the helplessness and depression described in the subtype. Also, it is notable that this was the only subtype to show significant correlations with types of childhood trauma, specifically emotional abuse and sexual abuse, supporting the association with adverse childhood events in Study 1. Finally, as in Study 1, the Dependent subtype showed poor global adaptive functioning, although a specific association with poor employment was not found.

The final subtype, Obsessional, was not well represented in Study 2. This may be because a ruminative, emotionally constricted personality style resulting in a person who tends to be overly concerned with rules and order is not an adaptive response in a chaotic inner city environment. It is also possible that this subtype is an artifact of Study 1. However, the solid validity data found for the Obsessional subtype in Study 1 make it a promising candidate for future studies.

Overall, correlations in Study 2 strongly supported the existence of Externalizing Dysregulated, Resilient, and Dependent subtypes, provided moderate support for the Internalizing subtype, and showed relatively weaker support for the Obsessional subtype.

Study 3 found subtypes of PTSD in a national sample of adolescents currently in treatment. The first three subtypes, Externalizing Dysregulated, Internalizing, and Resilient replicated well. That these subtypes appeared in adolescence is a strong indicator of their validity.

The Externalizing Dysregulated subtype tends to display the anger seen in the adult subtype but with more overall emotional dysregulation. Adolescents who matched this subtype tend to be rebellious and act impulsively. When strong emotions arise they become irrational, have difficulty perceiving both positive and negative qualities in the same person at the same time, and revert to less mature ways of coping. They tend not be psychologically minded and feel misunderstood, mistreated or victimized.

The Externalizing Dysregulated subtype had features of Antisocial and Histrionic PDs following the pattern of increased cluster B comorbidity. Axis I comorbidity with ADHD and Oppositional Defiant Disorder (ODD) is consistent with the angry, emotionally dysregulated and rebellious style described by the SWAP items comprising the Emotionally Dysregulated subtype.

The Internalizing subtype also appears similar to the adult subtype. Adolescents who matched this subtype tend to be depressed, guilty, and feel inadequate. They felt ashamed, have a deep sense of inner badness and fear abandonment. The Internalizing subtype showed a correlation with Avoidant PD and a negative correlation with Conduct Disorder and ODD. As in the other two studies, adolescents who matched the Resilient subtype showed no comorbidity on Axis I or Axis II and report a positive family environment.

The final Subtype we labeled Impulsive. Adolescents who matched this subtype lacked a stable sense of self, became inappropriately attached to others, entered into abusive relationships, abused alcohol or drugs, and engaged in other self-destructive behavior. Several of these items appear similar to the adult Dependent subtype while others appeared more externalizing. They attempted to manage their emotions through both self-destruction and inappropriate attachment relationships, which may evolve into the different adult subtypes found in Study 1. This subtype may represent a group of adolescents whose pathology (and personality) tends to be less stable in that their form of adult pathology is still emerging.

Taken together, these three studies represent a largely consistent picture of personality subtypes of PTSD. Study 1 identified five subtypes, four of which (Externalizing Dysregulated, Internalizing, Resilient, and Dependent) showed moderate to strong external validity in a second sample. That the Obsessional subtype did not replicate as well is likely due to characteristics of the sample and the self-report measure of OCPD rather than a lack of coherence for the subtype. Additionally, three of the subtypes (Externalizing Dysregulated, Internalizing, and Resilient) replicated well in a sample of adolescents with precursors of the Obsessional and Dependent subtypes apparent.

Overall, these findings support and expand on previous research that suggests PTSD may not be best conceptualized as a unitary disorder but instead as a disorder with at least three subtypes, defined by divergent personality constellations. Across three studies, the subtypes showed consistently different patterns of convergent and divergent validity across all four classes of external criterion variables studied, thus strongly arguing for their consideration in future research.

Although further research may help refine the specific structure of these subtypes, these three studies in addition to prior research indicate that significant personality variation exists within PTSD. Using these subtypes in research on the etiology and treatment of the disorder may allow us to identify important variables that have been obscured by treating PTSD as a unitary construct.

Limitations

In addition to the limitations of each study addressed above, one of the remaining questions from this study is causation. The primary limitation of these studies is that they are correlational and are not designed to answer causal questions. This limitation is not unique to this study—it applies equally to the majority of studies of trauma and PTSD—but remains a significant limitation nonetheless. Thus, an important question left unanswered by these studies is whether these personality variations were present before the trauma or a result of them. The few prospective studies that exist suggest premorbid personality traits predict PTSD subtype (Miller, 2003). Additionally, trauma that occurs while personality is still developing during adolescence or early adulthood may shape or change the direction of personality development. Nevertheless, prospective longitudinal research is clearly in order.

Future Directions

These studies offer preliminary evidence of the existence of stable personality subtypes of PTSD; future research is needed to refine their role in our understanding of PTSD. While larger studies using a variety of personality measures will corroborate or disconfirm the replicability of the subtypes identified in these studies, the stronger test for the usefulness of these subtypes will

be tested using a "lumping vs. splitting framework." That is, does the addition of these subtypes add additional information over viewing PTSD as a unitary construct? Adding measures of personality to most currently designed PTSD studies examining the biology, etiology and treatment of PTSD can test this hypothesis.

For example, these subtypes could have significant implications for our understanding of the treatment of PTSD. A multi-dimensional meta-analysis of published PTSD treatment studies from 1980-2003 (Bradley, et al., 2005a) showed 47%-60% of subjects improved with treatment. While these rates are impressive, it still leaves a large number of patients without improvement and no guidance as to which treatments work for which patients. One testable hypothesis is whether the improve/not improve groups differ based on subtype. Alternatively, there may be subtype by treatment interactions such that particular subtypes respond better to particular treatments. For example, the Externalizing Dysregulated subtype might respond to the direct approach of Prolonged Exposure while the Internalizing subtype might respond better to the softer touch of Cognitive Processing Therapy, or vice versa. It also might be the case that one or more of the subtypes respond better to a longer-term exploratory psychotherapy. This is just one example of the type of question that may be answered using the subtypes identified above to understand PTSD.

Another example of the potential importance of subtyping work is in the area of gene-environment interaction studies. It may be that different combinations of genes interact with the same or different environmental variables to produce different subtypes of PTSD. For example, a gene by environment interaction has been found between the short allele of 5-HTTLPR, a gene that regulates the serotonin transporter, and stressful events predicting depression (Caspi et al., 2003; Kendler, Kuhn, Vittum, Prescott, & Riley, 2005). It is possible that this gene may be

important in a person developing the Internalizing subtype of PTSD. This, and the potential treatment study described above, serve as two examples of future research that may be fruitful using subtypes of PTSD.

Overall, this dissertation contributes to the literature by identifying reliable subtypes across three samples. Three subtypes, Externalizing Dysregulated, Internalizing, Resilient, demonstrated good consistency across two demographically different samples of adults and a sample of adolescents. A fourth subtype, Dependent, showed good external validity across both adult studies, and a fifth subtype, Obsessional, showed evidence of validity in one study, suggesting two new subtypes as good candidates for future research. Finally, an Impulsive subtype was identified that is unique to an adolescent sample. Hopefully, researchers will use these findings to further our understanding of the intersection of personality and PTSD.

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Table 1: Adult National Sample Q-Factors: Subtypes of PTSD

Q-Factor 1: Externalizing Dysregulated **(Items below are verbatim SWAP-II items)**	**Factor Score***
Is prone to intense anger, out of proportion to the situation at hand (e.g., has rage episodes).	3.84
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	2.99
Tends to have extreme reactions to perceived slights or criticism (e.g., may react with rage, humiliation, etc.).	2.89
Tends to be angry or hostile (whether consciously or unconsciously).	2.83
Tends to get into power struggles.	2.54
Tends to become irrational when strong emotions are stirred up; may show a significant decline from customary level of functioning.	2.41
Tends to feel misunderstood, mistreated, or victimized.	2.10
Attempts to avoid feeling helpless or depressed by becoming angry instead.	2.08
Tends to hold grudges; may dwell on insults or slights for long periods.	1.99
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	1.85
Tends to be critical of others.	1.81
Tends to be manipulative.	1.80
Tends to feel unhappy, depressed, or despondent.	1.76
When upset, has trouble perceiving both positive and negative qualities in the same person at the same time (e.g., may see others in black or white terms, shift suddenly from seeing someone as caring to seeing him/her as malevolent and intentionally hurtful, etc.).	1.71
Repeatedly re-experiences or re-lives a past traumatic event (e.g., has intrusive memories or recurring dreams of the event; is startled or terrified by present events that resemble or symbolize the past event).	1.69
Is prone to painful feelings of emptiness (e.g., may feel lost, bereft, abjectly alone even in the presence of others, etc.).	1.64
Expresses emotion in exaggerated and theatrical ways.	1.62

Tends to be controlling.	1.57
Q-Factor 2: Internalizing	
Tends to feel unhappy, depressed, or despondent.	2.67
Tends to feel guilty (e.g., may blame self or feel responsible for bad things that happen).	2.65
Tends to feel s/he is inadequate, inferior, or a failure.	2.57
Tends to feel ashamed or embarrassed.	2.52
Tends to feel anxious.	2.43
Repeatedly re-experiences or re-lives a past traumatic event (e.g., has intrusive memories or recurring dreams of the event; is startled or terrified by present events that resemble or symbolize the past event).	2.43
Has a deep sense of inner badness; sees self as damaged, evil, or rotten to the core (whether consciously or unconsciously).	2.35
Tends to feel helpless, powerless, or at the mercy of forces outside his/her control.	2.26
Is prone to painful feelings of emptiness (e.g., may feel lost, bereft, abjectly alone even in the presence of others, etc.).	2.18
Tends to be shy or self-conscious in social situations.	1.88
Is self-critical; sets unrealistically high standards for self and is intolerant of own human defects.	1.80
Has trouble acknowledging or expressing anger toward others, and instead becomes depressed, self-critical, self-punitive, etc. (i.e., turns anger against self).	1.73
Tends to feel life has no meaning.	1.66
Tends to avoid social situations because of fear of embarrassment or humiliation.	1.64
Has moral and ethical standards and strives to live up to them.	1.59
Tends to fear s/he will be rejected or abandoned.	1.59
Tends to enter altered, dissociated states when distressed (e.g., the self or world feels strange, unreal, or unfamiliar).	1.57
Appears to want to "punish" self; creates situations that lead to unhappiness, or actively avoids opportunities for pleasure and gratification.	1.55
Q-Factor 3: Resilient	

Is articulate; can express self well in words.	3.43
Tends to be conscientious and responsible.	3.36
Has a good sense of humor.	2.82
Has moral and ethical standards and strives to live up to them.	2.68
Enjoys challenges; takes pleasure in accomplishing things.	2.54
Is empathic; is sensitive and responsive to other peoples' needs and feelings.	2.54
Tends to feel anxious.	2.34
Repeatedly re-experiences or re-lives a past traumatic event (e.g., has intrusive memories or recurring dreams of the event; is startled or terrified by present events that resemble or symbolize the past event).	2.28
Tends to be liked by other people.	2.17
Tends to feel guilty (e.g., may blame self or feel responsible for bad things that happen).	2.10
Is creative; is able to see things or approach problems in novel ways.	1.95
Finds meaning and fulfillment in guiding, mentoring, or nurturing others.	1.95
Has the capacity to recognize alternative viewpoints, even in matters that stir up strong feelings.	1.90
Is able to use his/her talents, abilities, and energy effectively and productively.	1.89
Finds meaning and satisfaction in the pursuit of long-term goals and ambitions.	1.77
Is capable of hearing information that is emotionally threatening (i.e., that challenges cherished beliefs, perceptions, and self-perceptions) and can use and benefit from it.	1.69
Is psychologically insightful; is able to understand self and others in subtle and sophisticated ways.	1.64
Is capable of sustaining meaningful relationships characterized by genuine intimacy and caring.	1.59
Q-Factor 4: Dependent	
Tends to be needy or dependent.	3.51
Tends to fear s/he will be rejected or abandoned.	3.28

Tends to get drawn into or remain in relationships in which s/he is emotionally or physically abused, or needlessly puts self in dangerous situations (e.g., walking alone or agreeing to meet strangers in unsafe places).	2.77
Tends to become attached to, or romantically interested in, people who are emotionally unavailable.	2.64
Tends to become attached quickly or intensely; develops feelings, expectations, etc. that are not warranted by the history or context of the relationship.	2.62
Tends to feel helpless, powerless, or at the mercy of forces outside his/her control.	2.53
Is unable to soothe or comfort him/herself without the help of another person (i.e., has difficulty regulating own emotions).	2.36
Tends to feel anxious.	2.23
Tends to express anger in passive and indirect ways (e.g., may make mistakes, procrastinate, forget, become sulky, etc.).	2.14
Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	2.13
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	2.09
Tends to be passive and unassertive.	1.88
Fantasizes about ideal, perfect love.	1.78
Tends to feel unhappy, depressed, or despondent.	1.74
Lacks a stable sense of who s/he is (e.g., attitudes, values, goals, and feelings about self seem unstable or ever-changing).	1.71
Work-life and/or living arrangements tend to be chaotic or unstable (e.g., job or housing situation seems always temporary, transitional, or ill-defined).	1.69
Tends to be suggestible or easily influenced.	1.66
Tends to be ingratiating or submissive (e.g., consents to things s/he does not want to do, in the hope of getting support or approval).	1.66

Q-Factor 5: Obsessional	
Tends to ruminate; may dwell on problems, replay conversations in his/her mind, become preoccupied with thoughts about what could have been, etc.	2.78
Tends to be critical of others.	2.49
Appears to have a limited or constricted range of emotions.	2.20
Lacks social skills; tends to be socially awkward or inappropriate.	2.12
Tends to be overly concerned with rules, procedures, order, organization, schedules, etc.	2.00
Has difficulty making sense of other people's behavior; tends to misunderstand, misinterpret, or be confused by others' actions and reactions.	1.83
Tends to be self-righteous or moralistic.	1.82
Tends to become absorbed in details, often to the point that s/he misses what is significant.	1.79
Has little psychological insight into own motives, behavior, etc.	1.78
Lacks close friendships and relationships.	1.77
Tends to hold grudges; may dwell on insults or slights for long periods.	1.76
Tends to elicit boredom in others (e.g., may talk incessantly, without feeling, or about inconsequential matters).	1.68
Tends to be conscientious and responsible.	1.65
Is hypochondriacal; has exaggerated fears of contracting medical illness (e.g., worries excessively about normal aches and pains).	1.62
Tends to develop somatic symptoms in response to stress or conflict (e.g., headache, backache, abdominal pain, asthma, etc.).	1.56
Tends to adhere rigidly to daily routines and become anxious or uncomfortable when they are altered.	1.55

Tends to feel misunderstood, mistreated, or victimized.	1.54
Seems naïve or innocent; appears to know less about the ways of the world than might be expected given his/her intelligence or background.	1.40

* Factor scores in this table represent the number of standard deviations the item is from the mean of the other items—that is, its centrality to the construct relative to the universe of items in the item set.

Table 2: The Validity of Personality Subtypes in a National Sample of Adults in Treatment
(Hypothesized predictions are in bold)

	Externalizing Dysregulated	**Internalizing**	**Resilient**	**Dependent**	**Obsessional**
Axis II Comorbidity (Number of Symptoms)					
Antisocial	**.54****	-.49**	-.54**	.23**	-.17*
Avoidant	-.01	**.43****	-.20**	-.02	-.03
Borderline	**.54****	-.09	-.46**	.23**	-.42**
Dependent	-.01	.06	-.23**	**.54****	-.07
Histrionic	**.33****	-.49**	-.38**	.44**	-.12
Narcissistic	**.47****	-.58**	-.46**	.20**	.02
Obsessive	0.02	-.09	.02	-.34**	**.35****
Paranoid	**.56****	-.34**	-.45**	.07	0.10
Schizoid	.15*	.30**	-.42**	-.26**	.28**
Schizotypal	.22**	.00	-.42**	-.02	.22**
Axis I Comorbidity (Yes/No Diagnosis)					
Major Depression	.08	**.26****	-.15*	0.09	0.02
Dysthymia	-.06	.05	.09	-.00	.00
Panic	-.04	**.17***	-.07	-.02	.06
GAD	-.04	**.09**	-.02	.06	.02
Social Phobia	-.02	**.23****	-.08	-.11	.18*
Substance Use	**.21****	-.05	-.29**	0.13	-.31**
Developmental Variables					
Adverse Childhood Events	**.17***	-.02	-.16*	.15*	-.32**
Attachment Disruptions	**.21****	-.10	-.18*	.13	-.31**
Childhood Family Environment	**-.14**	-.11	**.17***	-.01	.30**
Childhood Trauma Composite	**.12**	.06	-.15*	.14	-.34**
Childhood Psychopathy Predictors	**.20****	-.24**	-.24**	.04	-.10
Family Stability	-.16*	-.03	**.18***	-.14	.30**
Family Warmth	-.10	-.18*	**.17***	.01	.24**
Adaptive Functioning					
Employment Composite	**-.46****	.07	.50**	-.23**	-.03
Externalizing Composite	**.33****	-.30**	-.29**	.07	-.02
Victimization Composite	.11	-.03	-.07	**.30****	-.31**
Global Adaptive	**-.43****	**-.19****	**.65****	**-.16***	**-.04**

Functioning Composite					
GAF	-.27**	-.25**	.29**	-.04	0.00

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Descriptions of composite variables can be found in Appendix B

Table 3: The Validity of Personality Subtypes in an Urban, Inner-City, Non-Treatment Seeking Population
(Hypothesized predictions are in bold)

	Externalizing Dysregulated	**Internalizing**	**Resilient**	**Dependent**	**Obsessional**
Axis II Comorbidity (Self Reported SNAP data)					
Antisocial	**.42****	-.09	-.35**	**.08**	-.19
Avoidant	.31**	**.15**	-.23*	.18	.02
Borderline	**.37****	-.13	-.40**	**.05**	-.07
Dependent	.30**	.04	-.26*	**.22***	-.22*
Histrionic	**.20**	-.25*	-.17	**-.05**	-.18
Narcissistic	**.13**	-.09	-.16	**-.03**	-.24*
OCPD	.04	.09	.05	-.04	**0.11**
Paranoid	**.32****	.08	-.23*	.13	-.05
Schizoid	**.17**	**.22***	-.15	.04	**.23***
Schizotypal	**.27***	.14	-.16	.20	**-.05**
Axis I comorbidity (No/Yes (0/1) SCID Dx using different rater)					
MDD lifetime prevalence	.04	**.06**	-.04	.25*	-.32**
Dysthymic Disorder lifetime prevalence	.11	.07	-.05	-.02	.22*
Panic	-.03	**.29****	.04	.20	.04
GAD	0.10	0.15	-.04	0.08	0.12
Social Phobia lifetime prevalence	-.01	**.08**	.01	.12	**-.15**
Specific phobia lifetime prevalence	-.06	.07	.16	.09	-.16
Alcohol Abuse	**.26***	.02	-.20	.01	.03
Cannabis Abuse	**.06**	.16	-.08	.13	-.03
Cocaine Abuse	**.25***	-.11	-.29**	.02	-.05
BDI Total	.38**	.35**	-.30**	.41**	-0.04
Developmental Variables					
Attachment Disruptions	**.03**	-.12	-.07	-.15	-.09
Childhood Psychopathy Predictors	**.31****	-.43**	-.48**	-.07	-.16
Family Stability	-.25*	.09	**.25***	-0.16	.06
Family Warmth	-.29**	.00	**.28***	-0.13	-.12

Trauma History (Childhood Trauma Questionnaire)					
Emotional Abuse	.12	.00	-.06	.23*	-.14
Physical Abuse	.10	-.08	-.16	0.06	.02
Sexual Abuse	.16	.15	-.08	.30**	-.16
Total Score	.18	.03	-.09	.25*	-.11
Adaptive Functioning					
Employment Composite	**-.27***	.10	**.33****	-.12	.23*
Externalizing Composite	**.37****	-.21	-.28**	.09	-.29**
Global Adaptive Functioning Composite	**-.46****	**-.04**	**.58****	**-.37****	**0.07**
GAF score	-.10	.21	.30*	-0.23	011

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed

Table 4: Adolescent National Sample Q-Factors: Subtypes of PTSD

Q-Factor 1: Externalizing Dysregulated (Items below are verbatim SWAP-II items)	**Factor Score***
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	2.74
Is prone to intense anger, out of proportion to the situation at hand (e.g., has rage episodes).	2.62
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	2.61

Is rebellious or defiant toward authority figures; tends to be oppositional, contrary, quick to disagree, etc.	2.58
Tends to be manipulative.	2.43
Tends to be angry or hostile (whether consciously or unconsciously).	2.33
Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	2.31
Tends to become irrational when strong emotions are stirred up; may show a significant decline from customary level of functioning.	2.31
When upset, has trouble perceiving both positive and negative qualities in the same person at the same time	2.28
Tends to have extreme reactions to perceived slights or criticism (e.g., may react with rage, humiliation, etc.).	2.11
Has little psychological insight into own motives, behavior, etc.	1.97
Tends to feel misunderstood, mistreated, or victimized.	1.95
Attempts to avoid feeling helpless or depressed by becoming angry instead.	1.90
Emotions tend to change rapidly and unpredictably.	1.84
Tends to give up quickly when frustrated or challenged.	1.82
Is unable to soothe or comfort him/herself without the help of another person.	1.69
Tends to feel unhappy, depressed, or despondent.	1.52
When distressed, tends to revert to earlier, less mature ways of coping.	1.48
Q-Factor 2: Internalizing	
Tends to feel unhappy, depressed, or despondent.	3.10
Tends to feel s/he is inadequate, inferior, or a failure.	2.61
Tends to fear s/he will be rejected or abandoned.	2.44
Tends to feel guilty (e.g., may blame self or feel responsible for bad things that happen).	2.39
Tends to feel helpless, powerless, or at the mercy of forces outside his/her control (beyond what is warranted by the situation).	2.31
Tends to feel ashamed or embarrassed.	2.22

Tends to be shy or self-conscious in social situations.	2.19
Tends to feel like an outcast or outsider.	2.17
Is prone to painful feelings of emptiness (e.g., may feel lost, bereft, abjectly alone even in the presence of others, etc.).	1.92
Tends to feel anxious.	1.89
Has a deep sense of inner badness; sees self as damaged, evil, or rotten to the core (whether consciously or unconsciously).	1.84
Tends to feel listless, fatigued, or lacking in energy.	1.84
Repeatedly re-experiences or re-lives a past traumatic event	1.71
Is troubled by recurrent obsessional thoughts that s/he experiences as intrusive.	1.7
Is self-critical; sets unrealistically high standards for self and is intolerant of own human defects.	1.64
Appears to find little or no pleasure, satisfaction, or enjoyment in life's activities.	1.59
Tends to avoid, or try to avoid, social situations because of fear of embarrassment or humiliation.	1.57
Tends to ruminate; may dwell on problems, replay conversations in his/her mind	1.57
Q-Factor 3: Resilient	
Is articulate; can express self well in words.	2.83
Has a good sense of humor.	2.66
Tends to be liked by other people.	2.61
Is able to assert him/herself effectively and appropriately when necessary.	2.23
Attempts to avoid feeling helpless or depressed by becoming angry instead.	2.20
Has moral and ethical standards and strives to live up to them.	2.18
Enjoys challenges; takes pleasure in accomplishing things.	2.13
Tends to be conscientious and responsible.	2.11
Tends to be angry or hostile (whether consciously or unconsciously).	1.99

Is capable of sustaining meaningful relationships characterized by genuine intimacy and caring.	1.92
Tends to be energetic and outgoing.	1.91
Tends to feel misunderstood, mistreated, or victimized.	1.84
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	1.83
Is able to use his/her talents, abilities, and energy effectively and productively.	1.79
Is empathic; is sensitive and responsive to other peoples' needs and feelings.	1.66
Is invested in seeing and portraying self as emotionally strong, untroubled, and emotionally in control, despite clear evidence of underlying insecurity, anxiety, or distress.	1.61
Tends to feel unhappy, depressed, or despondent.	1.59
Tends to be critical of others.	1.49
Q-Factor 4: Impulsive	
Lacks a stable sense of who s/he is (e.g., attitudes, values, goals, and feelings about self seem unstable or ever-changing).	2.73
Tends to abuse alcohol or drugs	2.70
Tends to become attached quickly or intensely; develops feelings, expectations, etc. that are not warranted by the history of the relationship.	2.52
Tends to engage in self-mutilating behavior (e.g., self-cutting, self-burning, etc.).	2.44
Is prone to painful feelings of emptiness (e.g., may feel lost, bereft, abjectly alone even in the presence of others, etc.).	2.41
Is sexually promiscuous for a person of his/her age, background, etc.	2.16
Tends to get drawn into relationships outside the family in which s/he is emotionally or physically abused, or needlessly puts self in dangerous situations (e.g., walking alone or meeting strangers in unsafe places).	2.13
Tends to surround him/herself with peers who are delinquent or deeply alienated.	2.08

Tends to feel unhappy, depressed, or despondent.	2.08
Relationships tend to be unstable, chaotic, and rapidly changing.	2.02
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	2.00
Tends to choose sexual or romantic partners who seem inappropriate in terms of age, status	2.00
Tends to run away from home.	1.88
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	1.82
Tends to be sexually seductive or provocative.	1.77
Tends to make repeated suicidal threats or gestures, either as a "cry for help" or as an effort to manipulate others.	1.69
Struggles with genuine wishes to kill him/herself.	1.64
Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	1.45

* Factor scores in this table represent the number of standard deviations the item is from the mean of the other items—that is, its centrality to the construct relative to the universe of items in the item set.

Table 5: The Validity of Personality Subtypes in a National Sample of Adolescents in Treatment
(Hypothesized predictions are in bold)

	Externalizing Dysregulated	**Internalizing**	**Resilient**	**Impulsive**
Axis II Comorbidity (Number of Symptoms)				
Antisocial	**.48****	-.53**	-.32	**.19**
Avoidant	.18	**.33***	-.41	.02
Borderline	**.14**	-.25	-.25	**.57****
Dependent	.18	-.16	-.16	**.19**
Histrionic	**.30***	-.59**	-.20	**.45***
Narcissistic	**.25**	-.57**	.11	**-.48***
Obsessive	.02	.04	-.44	-.13
Paranoid	**.16**	-.00	-.29	**-.56****
Schizoid	.22	**.28**	-.62**	**-.45***
Schizotypal	**.12**	.32	-.28	-.32
Axis I Comorbidity (No/Yes Diagnosis)				
Major Depression	-.23	**.29**	.25	.38*
Dysthymia	.09	.10	-.31	-.21
Obsessive-Compulsive	-.18	.19	.06	-.38
Panic	.05	.18	-.17	-.24
GAD	.01	.21	-.26	-.21
Social Phobia	.03	.09	-.26	-.38
Substance Use	**-.02**	-.12	-.44*	**.37**
ADHD	.36**	-.11	-.03	.16
Conduct Disorder	**-.05**	-.34*	.19	-.15
ODD	**.29***	-.45**	-.12	-.06
Composite Developmental Variables				
Adverse Childhood Events	.22	-.23	-.22	-.03
Attachment Disruptions	.26	-.22	-.14	-.10
Childhood Environment	-.11	.26	.50*	-.09
Childhood Trauma	.18	-.18	-.32	-.05
Adaptive Functioning				
Externalizing	.16	-.42*	-.38	.14

Composite				
School Composite	-.30*	.25	.09	.15
Global Adaptive Functioning Composite	-.30*	-.14	.39	-.30

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

Appendix A

DSM-IV PTSD CRITERIA

Criterion A: stressor

The person has been exposed to a traumatic event in which both of the following have been present:
1. The person has experienced, witnessed, or been confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others.
2. The person's response involved intense fear, helplessness, or horror. Note: in children, it may be expressed instead by disorganized or agitated behavior.

Criterion B: intrusive recollection

The traumatic event is persistently re-experienced in at least one of the following ways:
1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: in young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
2. Recurrent distressing dreams of the event. Note: in children, there may be frightening dreams without recognizable content
3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). Note: in children, trauma-specific reenactment may occur.
4. Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.
5. Physiologic reactivity upon exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

Criterion C: avoidant/numbing

Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by at least three of the following:
1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma
2. Efforts to avoid activities, places, or people that arouse recollections of the trauma
3. Inability to recall an important aspect of the trauma
4. Markedly diminished interest or participation in significant activities
5. Feeling of detachment or estrangement from others
6. Restricted range of affect (e.g., unable to have loving feelings)
7. Sense of foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

Criterion D: hyper-arousal

Persistent symptoms of increasing arousal (not present before the trauma), indicated by at least two of the following:
1. Difficulty falling or staying asleep
2. Irritability or outbursts of anger
3. Difficulty concentrating
4. Hyper-vigilance
5. Exaggerated startle response

Criterion E: duration

Duration of the disturbance (symptoms in B, C, and D) is more than one month.

Criterion F: functional significance

The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than three months
Chronic: if duration of symptoms is three months or more

Specify if:

With or Without delay onset: Onset of symptoms at least six months after the stressor

Appendix B

Key for Composite Variables

Adult Composites

Adverse Childhood Events

A composite combining the variables included in Attachment disruptions and Childhood Trauma below.

Attachment Disruptions

1) Lengthy Separation from Caregiver
2) Parental divorce/separation
3) Mother died in childhood
4) Father died in childhood
5) Foster child

Childhood Family Environment

1) Rate Family Environment from 1 (chaotic) to 5 (predictable)
2) Rate Family Environment from 1 (cold/hostile) to 5 (warm/nurturing)

Childhood Trauma Composite

1) Physical Abuse
2) Sexual Abuse
3) Witness Violence

Childhood Psychopathy Predictors

1) Bed-wetting
2) Fire Setting
3) Torture Animals
4) Fights

Employment Composite

1) Employment History rated from 1 (unable to keep job) to 5 (working to full potential)
2) Has patient lost a job in the last 5 years due to interpersonal problems at work?

Externalizing Composite:

1) Has patient committed a violent crime in last 5 years?
2) Perpetrator of physical abuse
3) Arrested in last 5 years
4) Self-mutilation

Victimization Composite

1) Victim of a serious sexual assault as an adult
2) Victim of a physically abusive relationship

Global adaptive functioning,

1) GAF ratings,
2) Degree of personality disturbance,
3) Quality of friendships,
4) Quality of romantic relationships,
5) Social support

Adolescent composites

Global Externalizing Pathology

1) Number of arrests
2) Committed violent crime
3) Stealing
4) Lie
5) Truant
6) Use drugs

Global Adaptive Functioning

1) GAF ratings,
2) Degree of personality disturbance,
3) Quality of friendships,
4) Success in school
5) Social support