PSYCHIATRIC CLINICS
OF NORTH AMERICA

Child Development and Personality Disorder

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Empirical data on personality disorder in childhood and adolescence have been sparse until the past decade. There are several probable reasons for this, including the separation of "disorders beginning in childhood" as a category in the Diagnostic and Statistical Manual of Mental Disorders (DSM) [1], and the assumption by the DSM of instability of personality in childhood ("It should be recognized that the traits of a Personality Disorder that appear in childhood will often not persist unchanged into adult life."). The DSM was not wrong on this issue: behavior and personality patterns are less stable in childhood and adolescence; however, it is increasingly realized that this is a matter of degree of stability compared with adults. Longitudinal studies of carefully diagnosed patients [2,3] have shown that variation over time in personality disorder (PD) symptom pattern and level in adulthood is also typical.

Two other gradual changes in empirically founded theoretical perspectives have also contributed to the beginning of a blossoming in empirical work relevant to the development of personality disorder. One is the increasing appreciation that most mental disorders have prodromal signs or even onset much earlier in life than is implicit in an adult-oriented diagnostic system. For example, the National Comorbidity Survey Replication found half of all lifetime cases of anxiety, mood, impulse-control, and substance use disorders to have started by age 14 by retrospective report [4]. Another reason for a growth in interest in developmental issues in PD is the increasing appreciation of the complexity of gene and environmental causes of all mental disorders reflected in empirical work based on human and animal models [5]. But ideal developmental studies begin early in life, are longitudinal, and include a wide range of prospectively collected potential risks and precursors of the disorders being studied. Some studies may be based on children with diagnosable or clear PD spectrum symptomatic elevation. Other studies may be based on a large enough general population to include a number of likely PD-vulnerable

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children. Such studies, of course, must be performed in real time, and thus require investigator commitment and funding over an extended period.

To date, the only long-term PD study beginning in early childhood and assessing PD by early adolescence is the Children in the Community (CIC) study of a randomly selected cohort of about 800 American children first studied at a mean age of 6 and first assessed for all Axis I and Axis II mental disorders at mean age of 13.5 [6]. The cohort will be about mean age 38 on completion of the current assessment of all mental disorders in 2009.

An earlier review on vulnerability to personality disorder [7] noted the sparseness of prospectively measured (or even retrospective) data on childhood characteristics preceding PD. In consequence, they focused on seven kinds of PD symptoms that are diagnostic criteria for one or more PDs: (1) a hostile, paranoid world view; (2) intense, unstable, inappropriate, or flat emotion; (3) impulsivity or rigidity; (4) overly close or distant/avoidant relationships; (5) extreme or absent sense of self; (6) peculiar thought processes and behaviors; and (7) psychopathy. Each of these symptom sets has at least some relevant research history in the area of child development, although generally no direct evidence of prediction of later PD.

WHAT IS ''PERSONALITY'' AND HOW DOES IT DEVELOP?

Actual empirical studies of the development of PD covering more than a limited section of the period from birth or very early life to adulthood are sparse. Nevertheless, the last decade has been a very fertile one for increasing convergence on models of personality development, arising in particular from evolving conceptions of the origins and role of personality. These newer models present personality as arising from the combination of basic and universal emotions and emotion-related experience. A recent integration of this emerging consensus is provided by Izard [8], who calls upon a broad literature from biological and brain studies to animal models. Izard [8] views emotions as the source of ''universal capacities to regulate and motivate cognition and action independent of the cyclic processes that characterize homeostasis and physiological drive states.'' Six emotions are considered to be basic because they are unlearned and universal (although varying in strength across individuals) and ''preempt consciousness.'' These are interest, joy/happiness, sadness, anger, disgust, and fear. Interest and joy/happiness are functional at birth and the others are functional within the first 2 years. As Jack Block [9] has indicated in the title of his book, Personality as an Affect-Regulating System this theoretical stance is also consistent with his general perspective, although Block views the most fundamental affect as anxiety produced by perceived or experienced danger, beginning in early childhood.

A two-dimensional view of children's problems reflected in Block's relatively simple classification of children into undercontrolled, overcontrolled, and resilient (the low-problem group) also matches the basic dimensions also found in measures of parental descriptions of the emotional/behavioral problems of young offspring. Thus, Achenbach's Child Behavior Check

List (CBCL) [10] descriptions of problematic child behavior show a clear (if higher-order) two- (correlated) factor structure, internalizing (including elements reflecting overcontrol) and externalizing (undercontrol) problems. However, more recent analyses of CBCL dimensions as assessed in general rather than clinical populations indicate that even when the data are limited to a problem checklist a more discriminating series of eight factors or dimensions are also measurable. The identified dimensions of problems as reflected in the CBCL administered in unselected adolescent populations as well as clinical samples in 30 different countries include anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggression [11]. Furthermore, these dimensions are closely matched by those based on adult self-report of the same problems [12].

Over time, the basic positive and negative emotions are gradually replaced by emotion schemas in which cognitive frames, appraisals, and attributions develop out of the individual's emotional experience and replace the basic emotions as the predominant motivators. These "motivators" may be seen as temperament in early childhood, in a period in which it may be normative that biological differences may have a dominant influence. With increasing age, the schemas combine these emotional states in relatively common/correlated patterns but more-or-less uniquely across individuals, based on genetic and experiential combinations. Thus, personality differences develop from combinations of individual genetic-based differences in the relative strength of these emotions and life experiences that shape the nature of the individual's schema regarding self, others, and the world they live in. The development of personality over the next decades takes place as a series of adaptations to subsequent threats and pleasures, shaped by the individual's biological heritage, by the exposures experienced, and by the individual's emerging/changing interpretation of the world. Gradually, "stable coherent families of emotional schemas may become organized as personality traits" [8]. The relatively high heritabilities of personality disorder features from early childhood have been demonstrated in a young twin sample [13]. Caspi and colleagues [14] present an excellent fusion of the literature on the development of personality from early childhood throughout life and Shiner [15] applies this literature specifically to personality disorder.

Early Temperament Differences as Potential Precursors of Later Personality Disorder

Early temperament as reflected in Rothbart's Children's Behavior Questionnaire [16] reflects the Izard emotional dimensions in large part, including anger, fear and shyness, smiling/laughter/pleasure/approach, and attention focusing and inhibitory control, covering the overall variation in affective, activation, and attentional aspects of personality. Thus, this literature is potentially relevant to understanding early aspects of the constructive and disordered development of personality.

In a factor analysis of maternal reports of age 2 to 10 offspring, Cohen [17] found seven dimensions of mother-reported temperament variation and problems including anger, activity level, persistence, impulsivity, demanding, fearful, and negative mood in the CIC representative general population sample. Second-order factors combined anger, impulsivity, nonpersistence, and high activity in the first "difficult" factor and fearful, demanding, and negative mood in the second (inhibited). These dimensions resemble those identified by Thomas and Chess [18], and indeed the original items were based on their work. These higher-order "temperament" factors are also relatively consistent with those identified by Digman [19] whose data on school-age children were the source of the "big five" movement.

A grouping of these same temperament reports into those reflecting behavior problems, depressive problems, anxiety/fear, and immaturity at mean age 8 were used to predict persistent disorder in each of the three PD clusters assessed twice in adolescence [20]. Behavior problems predicted disorders in all three clusters with elevated odds of about 20% to 30% above average for those with such problems 1 SD above the mean. Depressive problems predicted Clusters A and B, each with odds about 40% higher for each SD. The anxiety problems, somewhat surprisingly, significantly predicted only Cluster B (with Odds Ratio = 1.23), whereas immaturity predicted all three clusters at about 20% to 30% higher rates for each SD increase. Sex differences were also present, among which the most interesting may be the prediction of persistent Cluster A disorder by behavior problems only in girls, and by depressive symptoms only in boys in analyses in which all early problem sets were included as predictors. New analyses of early temperament and personality disorder stability from adolescence to mid-adulthood of this cohort have not as yet been reported.

ASSESSMENT OF PERSONALITY DISORDER OR COMPONENTS OF PERSONALITY DISORDER IN CHILDHOOD: CURRENT STATUS

An examination of the published empirical literature on developmental aspects of PD shows that most of this work focuses either on borderline or antisocial PD.

Antisocial Personality Disorder

The literature relevant to early precursors of antisocial PD is substantial because it falls into the separate research domains of criminology and psychiatric disability [21,22]. Nevertheless, the connection between these two professional perspectives when focused on childhood is surprisingly tenuous, especially in view of the high fraction of childhood cases in clinical mental health services whose essential problems as viewed by parents and/or teachers are in the realm of antisocial behavior. And childhood assessments tend to be framed by the definitions of the diagnostic system including opposition/defiant (ODD) and conduct disorder (CD), which focus on behaviors rather than potentially underlying personality components that may motivate such behaviors and predict

the discriminating aspects of adult antisocial PD. Some part of this professional perspective may be a reflection of awareness that these disorders and elevated symptoms of these disorders are often time-limited in adolescence, and perhaps even a (dissocial) indicator of a maturational process. No effort will be made here to summarize the voluminous literature on the course and prediction into adulthood of these disorders; however, it is worth reviewing the personality component of adult antisocial disorder as viewed by criminologists, and the efforts to assess this prospectively in childhood.

Perhaps the most researched of the constructs that assess a central "personality" component of an adult PD is low empathy/callousness-unemotionality in children as precursors of antisocial PD. Farrington [23] presents a plea for assessment of childhood psychopathy, based on current evidence regarding its long-term importance [22,24]. Several measures of this construct are available, including the Basic Empathy Scale [25]. A clinically intended measure developed from items in Millon's Adolescent Clinical Inventory was shown to have predictive validity [26]. Evidence of a taxonic structure of psychopathy in youth that is independent of a broader antisocial behavior taxon has been reported [27]. Thus longitudinal evidence of the influence of early problems in this domain on more stable psychopathy and subsequent antisocial personality disorder is accumulating [22,28]; nevertheless, it is not clear that adoption of any of the several available measures is widespread in clinical settings.

Broader measures of deficiencies in understanding the perspectives and problems of others, including other children, are under development and experimental use [29,30]. The theoretical link between difficulties or delay of this basic interpersonal understanding and problems in subsequent social behavior, a central component of all personality disorders, would appear to be strong [31,32]. Thus, a potential future research extension of this aspect of early personality development risk may include issues of the developmental timing of "theory of mind" in infants and toddlers.

With regard to childhood development preceding adult antisocial PD, a recent concise summary of the eight leading theories of the development of chronic adult criminality is available in Farrington [33].

Borderline Personality Disorder

The Borderline Personality Features Scale [34] has been shown to be moderately stable over 1 year as self-reported by fourth- to sixth-grade children. School-aged children with and without a history of maltreatment have been shown to differ on a composite measure of borderline PD precursors [35].

Previously, the clinical diagnosis of borderline disorder in childhood or early adolescence has often been made upon presentation of a patient with a broad mix of problems including both "internalizing" symptoms such as anxiety and depression and "externalizing" symptoms such as impulsivity, defiance and oppositional behavior, and potential psychotic experiences and antisocial and/or substance abuse problems. Such patients typically also show suicidal or parasuicidal behavior, problems in relationships with family and peers, and extreme

dysfunction. This diagnosis often represents a mixed set of problems implying very poor prognosis that do not necessarily meet DSM borderline disorder criteria for adults. And, indeed, the follow-up studies thus far do not suggest that a large fraction of these children or adolescents will meet criteria for borderline disorder as adults, although they will not generally ''recover'' to function in the normative range either. It is possible that the general clinical diagnosis of borderline disorder in seriously dysfunctional patients at any age may have been a contributor to the very negative view of this disorder by professionals in the field and a reluctance to diagnose this or any other personality disorder in children or adolescents. Thus, although measures of borderline disorder can be reliably assessed in adolescents [36], its discriminant validity in patient samples may be problematic [37]. Nevertheless, a few clinical studies of childhood borderline disorder meeting DSM-III-R or -IV criteria are beginning to be available. Using a clinical sample of school-aged children, Zelkowitz and colleagues [38] found that children meeting criteria for borderline pathology also showed deficits in executive function, which predicted borderline pathology independently of trauma history.

ASSESSMENT OF PERSONALITY DISORDER IN CHILDREN AND ADOLESCENTS

Several measures of most or all PD disorders or symptoms in children or adolescents have been developed and employed. The Schedler-Westen Assessment Procedure-200 for Adolescents [39] is a Q-sort instrument designed for clinicians to use for adolescent patients. An assessment based on a checklist of the DSM criteria has also been shown to relate to other variables comparably to a structured diagnostic interview and thus provides a reasonable substitute. In addition, this research team obtained a global clinical rating of the extent to which the adolescent resembled each PD as described in the text of DSM-IV. These ratings showed good correlations with the criterion sum for the same disorder and more modest correlations with criteria of other PDs [40]. Some caution may appropriately accompany these methods because the study sample on which they were employed was selected by a national sample of clinicians as the last adolescent patient they had seen ''whose personality they felt they knew.'' A summary review of adolescent personality pathology assessment by this research team is also available [39].

The Coolidge Personality and Neuropsychosocial Inventory for Children [41] is a parent report instrument designed to assess all PDs in offspring between the ages of 5 and 17. It has been employed in a sample of 112 twin pairs at mean age 8.7 years to estimate heritabilities [13]. Larger monozygotic than dizygotic twin correlations for all PDs except passive-aggressive were shown, with the greatest ratio for conduct disorder (used as a childhood substitute for antisocial PD).

The CIC study originally adapted items from the Personality Disorder Questionnaire (PDQ) self-report adult measure [42] and adopted or wrote other items to replace age-inappropriate items [6]. The particular items selected

from this large protocol for these measures underwent several changes as the DSM-III changed to -III-R to -IV; as the cohort reached full adulthood necessarily self-report replaced combined self- and parent report, and clinical assessments were added [43]. Analyses of CIC data over the past few years have strongly suggested that when the goal is discriminating among the members of a general population sample, self-report may be about as adequate a reflection of PD symptoms as combined self-mother report even in early adolescence. Adaptations of the study's self-report measures have been developed and employed in several new studies with apparently good utility of responses [44].

A fairly comprehensive coverage of PD symptoms in childhood is reflected in the scales of the Dimensional Personality Symptom Items, which was modeled on Livesley's Dimensional Assessment of Personality Pathology designed for adults [45].

PROSPECTIVELY OR CURRENTLY ASSESSED CHILDHOOD RISKS FOR PERSONALITY DISORDER

Demographic Risks for Pre-Adult Personality Disorder

Analyses undertaken for somewhat different purposes showed a series of risks reported in early childhood to predict an aggregate measure of PD symptoms in both late adolescence and early adulthood. These risks include low socioeconomic status (SES) of family, being raised in a single-parent family, welfare support of family, parental death, and social isolation [46]. In aggregate, the early adolescent risks predicted 28% of the variance in PD symptoms 9 years later in adulthood. Related analyses looking at early risks for PD disorders by cluster demonstrated these SES effects over the same period [47]. A more recent study of the 2-decade course of borderline and schizotypal symptoms to cohort mean age 33 indicated an unabated and independent association of low family of origin (FO) SES with elevated symptoms of both disorders, net of potentially correlated effects of IQ, history of abuse, and problematic parenting [48]. Such findings suggest the environment and status of the family have strong and lasting effects on the social schemas that develop around the basic emotions and associated brain functions. In fact, these associations are so universal that FO SES is included as a "control" variable in virtually every analysis based on the CIC data. Excess parental divorce, substance abuse, and criminality were also reported in a young child clinical sample with borderline disorder in comparison with those without borderline disorder [49].

Physical Health Problems

Prenatal exposure to the Dutch famine in the WWII period has been shown to predict subsequent antisocial PD [50]. Pre- or perinatal problems may also result in lower intellectual function, which tends to be a (modest) risk for PD in adolescence and adulthood [46], particularly for symptoms of borderline and schizotypal PD [48]. In analyses not yet published, health problems in the infant's first year showed a modest but significant relationship with any PD assessed at mean age 13 by combined mother and child report in the CIC study.

Early Attachment Problems

A theoretically powerful early childhood risk for subsequent personality disorder is problematic attachment to parents, especially to mother. Attachment theory views early developmental experience as leading to a working model of the world, and particularly of reasonable expectations of social interaction [51]. These experiences seem particularly relevant to the development of PD because of the central component of social schema in PD and the expectation that such working models may be self-perpetuating by the behavioral responses that they tend to evoke. Attachment theory arose from Bowlby's [52] early focus on the infant's motivation for exploration and mastery, and the need for a secure base of operation. Despite probable differences in perspectives among child development researchers, this theory and the empirical evidence would seem to fit fairly well with Izard's [8] view of the factors that shape personality. Recent empirical tests of the relationships between PDs and attachment in adolescents and adults have been performed but no infants with different measured attachment patterns have been studied longitudinally with regard to personality disorder in late childhood, adolescence, or adulthood.

The alternative methods of assessing attachment in adolescents and adults remain a controversial topic that has been well reviewed [40]. Clinicians' ratings on the match between an adolescent patient and prototypes of secure, dismissive, preoccupied, and disorganized attachment were correlated with ratings of match with PDs. All PD ratings were negatively correlated with secure attachment, except histrionic, dependent, and obsessive PD. All cluster A PDs and avoidant PD were related to dismissing attachment, borderline, and dependent PD with preoccupied attachment, and cluster A PDs and borderline disorder with disorganized attachment. A study of clinical ratings of adult patients showed a similar correlational pattern.

Although attachment itself was not assessed in a comparison of 7- to 12-year-old children with borderline and nonborderline disorders in a day treatment program, those with borderline disorders had higher rates of foster placement (22% versus 13%) and parental divorce (80.5% versus 50.9%) [49].

Self-report measures of anxious and avoidant attachment in mid-adolescence were used to assess the independent prediction of PDs in the three diagnostic clusters in the emerging adulthood period and about a decade later at mean age 33 [53]. Interpersonal aggression was also employed as a control: high anxious attachment consistently predicted both Cluster B and Cluster C symptoms, whereas high avoidant attachment consistently predicted Cluster A symptoms and was consistently negatively related to Cluster C symptoms.

Parenting and Parent-Child Relationship

In the first report of risk for PD in a general population of adolescents (the CIC sample), Bezirganian and colleagues [54] reported that earlier maternal inconsistency with overinvolvement predicted both new-onset and persistent borderline disorder in adolescent offspring. The evidence of a PD predictive role for problematic parenting, and especially power assertive or harsh punishment and

low affection is accumulating in prospective data [55]. In this study, either or both aspects of problematic parenting assessed in adolescence predicted each Cluster A disorder; antisocial and borderline PD; and avoidant, passive-aggressive, and depressive PD in adulthood.

CHILDHOOD ABUSE AND NEGLECT AS PREDICTORS OF PERSONALITY DISORDER

A recent literature review has provided a detailed summary of published research findings regarding the empirically demonstrated associations of childhood physical, sexual, and emotional abuse, and childhood neglect with PD during adolescence or adulthood [56]. These different forms of abuse or neglect often occur together and reflect general severely inadequate or even malevolent parenting, but sexual abuse in particular may often not involve parents except as inadequate supervisors and protectors of offspring. Because they may have different implications for our understanding of their shaping influence on personality development, we note here where a given kind of childhood abuse or neglect appears to have effects on PD development that is independent of other kinds on the basis of at least one study.

Childhood physical abuse predicts antisocial, borderline, and schizotypal PD, independent of the effects of other types of childhood maltreatment; depressive, paranoid, passive-aggressive, and schizoid PD traits are also elevated following physical abuse but not independently of other abuse. Sexual abuse predicts every PD and PD symptom measure (traits) except dependent PD, and predicts borderline PD and histrionic and depressive PD traits net of other kinds of maltreatment. Childhood emotional abuse predicts borderline PD independent of other types of childhood maltreatment, as well as avoidant, depressive, narcissistic, obsessive-compulsive, paranoid, schizoid, and schizotypal PD traits.

Childhood neglect predicts subsequent avoidant, borderline, passive-aggressive, antisocial, and schizotypal PDs, independently of the effects of other types of child maltreatment, as well as dependent, narcissistic, paranoid, and schizoid PD traits. Further work on specific kinds of childhood neglect suggest that physical neglect may be differentially associated with traits of specific PDs. Despite these correlations, it is also clear that the child's perception of the meaning of the experience is an important element of its ultimate effect [57].

In clinical cases of childhood borderline disorder, sexual abuse and severe neglect were each higher in the history of these children in comparison with young children without borderline disorder in the same day treatment program [49]. This finding confirmed parallel findings reported earlier on the basis of clinical chart review [58].

OTHER SPECIFIC EARLY SIGNS OF PERSONALITY DISORDER

Although data on neurobiological correlates of childhood PD is yet to be widely explored, two indicators of problematic executive function, the Wisconsin Card Sorting Test and the Continuous Performance Test have been shown to be abnormal in school-age day treatment children with borderline pathology [59].

Early social inhibition has been shown to be associated with avoidant disorder in young offspring of parents with panic disorder, major depression, both, and neither [60]. Self-mutilation in childhood has been self-reported by adult patients with borderline disorder [61]. Other suicidal threats or behavior are also part of the history reported by adult borderline patients or their families, although unambiguous prospectively assessed suicidal behavior in childhood is thus far absent. Axis I disorders as comorbid, developmentally earlier, or subsequent are discussed later in this article. In the CIC study [62,63], adolescents with prosocial life goals were more likely to show a decline in PD as they moved into adulthood than were those with more materialistic and self-oriented goals.

Efforts to frame early temperament, personality, and developmental psychopathology in ways that facilitate the assessment of childhood risks and early manifestations of personality disorder are under way [64,65].

STABILITY OF PERSONALITY DISORDER FROM CHILDHOOD TO ADULTHOOD

Chronicity of adult personality disorder is associated with early onset as retrospectively reported in clinical populations [66]. Early adolescent clinical cases of disruptive behavior disorders were more likely to have Cluster B disorders at mean age 43, and adolescent girls with emotional disorders had elevated rates of Cluster C PD [67]. Nevertheless, early symptoms of PD are not necessarily followed by adult disorder. Most of the current data on the course of personality disorder in childhood and early adulthood comes from longitudinal studies of nonpatient population samples. Regardless of the method of assessment (combined parent and child, self-report only, and DSM-III-R or DSM-IV-based), symptoms of each PD and thus the prevalence of each PD declines with age, at least from age 9 through the mid-twenties [43,68–70]. In the CIC study, where these assessments began as early as age 9, it is likely that some of this decline is related to simple developmental maturation with regard to social skills and appreciation of cultural expectations by both peers and adults (eg, with respect to histrionic and narcissistic behavior) [69]. Disorders show somewhat more stability over time than certain Axis I disorders, such as major depressive disorder (which is episodic by definition) and childhood behavior disorders such as ODD and CD (which are generally not diagnosed in adulthood), but a full comparison of continuity over time among the PDs and between PDs and Axis I disorders has not as yet been performed in either clinical or general population samples. Adolescent PD not otherwise specified (NOS) was associated with increases of 3 to 4 times the odds of adult Cluster A, B, and C disorders 6 years later in young adulthood [71].

PREDICTIVE RELATIONSHIPS AND COMORBIDITY OF CHILDHOOD/ADOLESCENT AXIS I DISORDERS AND PERSONALITY DISORDERS

Comorbidity among the PDs in adolescence was high in the CIC cohort, with about half of those with any PD also meeting diagnostic criteria for one or

more other PDs [69]. An effort to understand this relationship was examined in a study of potential reciprocal effects of longitudinal courses of borderline and narcissistic PD symptoms from adolescence to adulthood [72]. Both sets of symptoms are highest in the early adolescent period, and correlated throughout. When narcissistic PD symptoms are high relative to borderline symptoms in early adolescence, both sets of symptoms tend to decline substantially, interpreted by the authors as a benign developmental delay subsequently compensated. In contrast, when borderline PD symptoms were high relative to narcissistic symptoms, the period following was characterized by a rise in narcissistic symptoms, viewed as a developmental ''process gone awry'' [72].

In clinical samples of adolescent and adult hospitalized patients with borderline disorder comorbidity with other PDs was shown to be higher in adolescence than in the adults [73], again potentially attributable to the immaturity reflected in symptoms of most or all PDs.

Comorbidity between early adolescent PDs and Axis I disorders is also very substantial, with about half of the early adolescents who had a disorder in one Axis likely to also have a disorder in the other in the CIC epidemiologic sample [74]. Such high comorbidity has also been shown in the few recent studies of PD in clinical samples of children. In their clinical sample of young boys with borderline disorder, Guzder and colleagues [49] found 25 (81%) of 31 had comorbid conduct disorder. In the full sample of girls and boys with borderline disorder, 67.5% also met criteria for ADHD, 47.5% for ODD, 22.5% for major depression, and 30% for overanxious disorder.

Both Axis I emotional and behavioral disorders in adolescence predict adult PDs [67], although the absence of earlier assessment in this study leaves open the questions of potential existence of these PDs in adolescence and reciprocal prediction across Axes. In the CIC study, the number of early adolescent Axis I disorders also predicted adult PDs 9 years later, to a maximum of 56% of those with four or more Axis I disorders having an adult Cluster A PD, 50% having a Cluster B PD, and 38% having a Cluster C PD [75]. These high prevalences contrast with prevalences of 4%, 12%, and 4% in those with no earlier Axis I disorder. The odds of schizoid, narcissistic, and antisocial PD in young adulthood increased by about five to six times among youth with a disruptive disorder in adolescence and the odds of adult paranoid PD increased about four times among adolescents with an anxiety disorder [76]. Early major depressive disorder (MDD) predicted both Cluster B and Cluster C PDs [75] and was a powerful predictor of adult antisocial PD [76]. Panic attacks in early adolescence also predict adult PD in each of the PD clusters [77].

Borderline, dependent, depressive, histrionic, and schizotypal symptom means over adolescence predicted MDD or dysthymic disorder over a decade later net of comorbid Axis I disorders in adolescence [78]. Early adolescent PD and CD were predictors of subsequent symptoms and diagnoses of substance abuse or dependence independently of other Axis I disorders and family risks. Analyses over 20 years indicated Cluster B disorder to be independent risks for new-onset substance use disorder (SUD) [79]. Early adolescent Axis I and Axis

II comorbidity showed the strongest prediction of treatment for mental illness including psychotropic drug use 20 years later [80]. Some measures of mid-adulthood disorder and dysfunction were more associated with Axis I disorder without PD 20 years earlier, and others more associated with PD without Axis I disorder 20 years earlier. However, almost all such measures were most negatively affected by early across-Axis comorbidity often essentially approximating an additive effect [74]. The high level of comorbidity suggests that much negative prognosis currently attributed to Axis I disorders may be attributable to these disorders.

PROGNOSTIC IMPLICATIONS OF EARLY PERSONALITY DISORDER AND ELEVATED PERSONALITY DISORDER SYMPTOMS

Findings are beginning to accumulate regarding the long-term functional prognosis associated with PD assessed in adolescence. Several studies of the CIC cohort investigated prognostic implications of adolescent PD for young adult problems (mean age 22). Crawford and colleagues [81] showed a prediction by adolescent Cluster B PD of low intimacy and well-being that increased as young people entered adulthood. Conflict with family members was high during the transition to adulthood (ages 17 to 27) for those with earlier paranoid, schizotypal, and narcissistic PD, and except for paranoid PD these effects were independent of comorbid Axis I disorders [82]. Both Axis I disorders and adolescent PDs predicted more negative young adult quality of life, with the most negative outcomes generally attributable to across-Axis comorbidity [83]. Over this same period, Cluster A symptoms in adolescence were associated with early parenthood and less advanced education (net of controls), the former in sharp contrast with expectations based on ultimate lower fertility in persons with full schizophrenia [84]. Ehrensaft and colleagues [85] showed continuity of PD symptoms from adolescence into early adulthood predicted subsequent partner violence and Johnson and colleagues [86] showed that the risk of violence in those with a PD history was twice as large as in those without such a history, with both Clusters A and B predicting significantly.

Adolescents with PD in each of the three diagnostic clusters showed substantially lower quality of life (QOL) in adulthood in the fourth decade of life [87]. Highest negative effects were for those with disorders in Cluster B; nevertheless, the effects of each of the PD clusters showed independent associations. Effects of adolescent borderline and schizotypal PD symptoms showed QOL reductions independent of comorbid disorders. Analyses of adolescents with borderline disorder or high symptoms in the CIC study are in press, showing functional problems over the following 20 years [88] including effects independent of early major depressive disorder or conduct disorder.

In sum, based on the CIC study, the evidence is surprisingly strong that even early adolescent personality disorders or elevated personality disorder symptoms have a broad range of negative effects well into adulthood, for the most part comparable to or even larger than those of Axis I disorders. Current

evidence suggests that the most severe long-term prognosis is associated with borderline and schizotypal PDs and elevated symptoms. And, of course, childhood conduct disorder is in a peculiar status, disappearing in adulthood to be manifest as a very severe disorder—antisocial PD—in a minority of those with the adolescent disorder.

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