Borderline Pathology of Childhood: Implications of Early Axis II Diagnoses

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ABSTRACT
Introduction: A personality pathology framework may be useful in the diagnosis and treatment of children with chronic psychopathology and impairment in many domains of functioning. This paper presents the utility of such an approach through a description of research investigating borderline pathology of childhood (BPC). Methods: Literature regarding the phenomenology, risk factors, and outcomes of BPC and similar disorders is reviewed. Results: Research conducted at the SMBD-Jewish General Hospital in Montreal has shown that children with BPC can be reliably identified via chart review, and that they exhibit a pattern of risk factors similar to that of adults with borderline personality disorder, such as psychological trauma and deficits in executive function. Preliminary results of a follow-up study in adolescence suggests that these children remain more functionally impaired than a comparison group. Our current research investigates neuropsychological deficits and their relationship to trauma in children with BPC. We are also exploring whether a similar pattern can be observed in their parents. Conclusion: We conclude that BPC symptom patterns may diagnostically define a group of high risk children and may eventually guide our approach to early intervention.

Key words: Borderline pathology of childhood, personality development, risk factors

INTRODUCTION: Continuity of psychopathology from childhood to adulthood

A diagnosis of personality pathology in children implies the presence of pervasive and chronic symptoms associated with impaired functioning that are not attributable to an episodic disorder (Hill & Rutter, 1994). Research findings regarding the long-term outcome of childhood psychopathology suggest that children do not necessarily outgrow their difficulties (Hechtman, 1996). Instead, early onset of illness and severity of symptoms tend to predict a chronic course of psychopathology (Tremblay et al., 2004; Zoccolillo, Quinton, Pickles, & Rutter, 1992), with a continuation of symptoms into adolescence and adulthood.

Research indicates that the precursors to some types of adult psychopathology can be observed in early childhood. Caspi and colleagues (1996) reported that observable symptomatology in children as young as three years of age can be predictive of major psychiatric diagnoses, such as antisocial personality disorder and depression, by 21 years of age. Similarly, research involving community samples of children has shown that behavioral disturbances in kindergarten are strongly predictive of both substance abuse (Masse & Tremblay, 1997) and delinquency (Tremblay, Pihl, Virta, & Dobkin, 1994) during adolescence. Impulsive symptoms in children are precursors of personality disorders in adolescence (Bernstein, Cohen, Skodol, Bezirganian, & Brook, 1996), while impulsive personality disorders in adolescents are strong predictors of adult personality pathology (Rey, Morris-Yates, Singh, Andrews, & Stewart, 1995).

Accordingly, an exploration of personality constructs may contribute to our understanding of the continuity of early pathological traits and symptoms. Recent research investigat-
ing personality in children indicates that personality structure in children is similar to that of adults (Shiner & Caspi, 2003). Studies have identified a small number of distinct personality types in early childhood that are predictive of later functioning (Hart, Atkins, & Fegley, 2003; Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996). By extension, utilization of personality pathology constructs may permit us to account for a broad range of symptomatology and a more chronic course, thereby affording clinicians a more useful diagnostic approach for children with multiple dysfunctions than the current practice of assigning several Axis I diagnoses.

**BORDERLINE PATHOLOGY OF CHILDHOOD: Clinical and Research Challenges**

In keeping with this formulation, the construct of borderline pathology of childhood (BPC) may provide us with a means to identify a group of severely disturbed children who exhibit impairment in many domains of functioning (Ad-Dab’bagh & Greenfield, 2001). The earliest descriptions of borderline pathology of childhood (Kernberg, 1983; Kestenbaum, 1983) were based on clinical observation using diverge or unsystematic criteria with small samples. They described a heterogeneous population (Petti & Vella, 1990) characterized by impaired thought processes, unstable mood, impulsive behavior, difficulty in social relationships, and neurological soft signs. Lofgren and colleagues (Lofgren, Bemporad, King, Lindem, & O’Driscoll, 1991) found that children with borderline pathology met diagnostic criteria for various axis II diagnoses by 18 years of age, but not bipolar or schizophreniform psychosis, which further supports the utility of using BPC as a diagnostic category.

Our research team has used the label “borderline” to describe a clinical picture resembling borderline personality disorder (BPD) in adults, which is characterized by impulsivity, emotional instability, transient psychotic episodes, unstable relationships, and cognitive impairment (American Psychiatric Association, 1994). We have demonstrated that these children can be reliably identified using a structured chart review measure (Guzder, Paris, Zelkowitz, & Marchessault, 1996; Guzder, Paris, Zelkowitz, & Feldman, 1999). The work of our research team and others have also identified risk factors associated with BPC, including psychological trauma, parental psychopathology, and neuropsychological deficits (Paris, 2003). Furthermore, preliminary data from an ongoing follow-up study indicates that the presence of BPC may be associated with a poorer prognostic presentation in adolescence (Zelkowitz et al., 2004). These results suggest that this diagnostic approach has clinical utility.

Other research groups have employed different terminology to refer to children with very similar symptom patterns. Some researchers have used the term “multiple complex developmental disorder” (MCDD) to distinguish these children from patients with autism or other pervasive developmental disorders (Lincoln et al., 1998; Towbin et al., 1993; van der Gaag, Buitelaar, van den Ban, Bezemer, & van Engeland, 1995). Proposed diagnostic criteria for MCDD include anxiety, impaired regulation of affective states, poor social relationships, deficits in cognitive processing, and the presence of thought disorder (e.g., magical thinking, bizarre ideas, and paranoid preoccupations) (Buitelaar & van der Gaag, 1998; Towbin et al., 1993). The prognosis for children with MCDD is poor, with longer hospital stays and less satisfactory outcomes following discharge, as compared to children with mood or conduct disorder alone (Towbin et al., 1993).

Kumra and colleagues (1998) used the term “multidimensionally impaired syndrome” (MDI) to describe a group of young patients who exhibit brief hallucinations and delusions particularly when stressed, emotional lability, impaired interpersonal skills, and marked aggression. These children differed from patients with early-onset schizophrenia in terms of cognitive development, attentional deficits, autonomic reactivity, and severity of behavior problems (Kumra et al., 1998). Moreover, children with MDI were distinguished from children with autistic spectrum disorders in that the former group did not exhibit significant impairment in social interaction, stereotyped behavior, and poor language development typical of children in the latter group. Follow-up studies involving children with multidimensionally impaired syndrome indicated that very few had psychotic disorders in adolescence, but many exhibited mood disorders and disruptive behavior disorders (Nicolson et al., 2001).

To summarize, several research teams have identified a distinct group of children with widespread psychopathology affecting multiple spheres of functioning. Although the diagnostic labels applied to the children are different, the diagnostic criteria are very similar. We have chosen to retain the label “borderline pathology of childhood” because of the similarities of both the symptom patterns and the risk factors to those of adults with borderline personality disorder. Since BPC is distinguishable from diagnostic categories such as autistic spectrum disorders or childhood schizophrenia (Ad-Dab’bagh & Greenfield, 2001), it may be more useful to conceptualize it as a personality construct or personality disorder prodrome, affecting a child’s thoughts, emotions, and behaviors. The use of traits and personality dimensions such as impulsivity might be a new direction for diagnosis in childhood.

**SIR MORTIMER B. DAVIS-JEWISH GENERAL HOSPITAL RESEARCH PROGRAM**

Our research group has investigated the associated risk factors and long-term outcomes of BPC. We are beginning to explore possible neuropsychological risk factors for borderline pathology in children and their parents. Following is a brief description of this research.

**Pilot Project**

The first step in our program was to determine the prevalence of BPC and identify associated risk factors through a chart review investigation of a cohort of 98 children (79 males, 19 females) in a day hospital treatment program (Guzder et al., 1996). We employed the Child Version of the Retrospective Diagnostic Interview for Borderlines (CDIB-R; Greenman, Gunderson, Cane, & Saltzman, 1986), a structured instrument designed to identify borderline pathology of childhood via chart review. The instrument yields ratings on 5 subscales measuring social adaptation, impulsivity, affect, psychosis, and interpersonal relations. We were able to establish good inter-rater reliability for this measure (K = .72). A group of 41 children met the CDIB-R criteria for BPC. There was no difference in the mean age of the children (10.0 for borderlines, 9.6 for non-borderlines), and the gender distribution in the two groups was similar (73% of the borderline...
group was male, as was 86% of the non-borderline group). Both the borderline and non-borderline groups showed poor global functioning, and our findings were independent of the severity of impairment. The groups did not differ in comorbidity, except for a higher frequency of post-traumatic stress disorder in the BPC group. This finding suggests that borderline pathology is distinguishable from other common behavioral disturbances in childhood, such as conduct disorder.

The most striking differences between our groups were that sexual abuse, physical abuse, and extreme neglect were all significantly more frequent in the borderline group. This may account for the higher rate of PTSD diagnoses in the borderline group. In addition, the borderline group was significantly more likely to have parents with histories of substance abuse and criminality. In a logistic regression on diagnosis, sexual abuse and extreme neglect had independent effects, while physical abuse, parental substance abuse and parental criminality did not. In a multiple regression on a scale measuring borderline pathology, a measure of cumulative abuse (the sum of all categorically measured occurrences of physical, sexual, and verbal abuse, and severe neglect) had an effect independent of non-abuse factors, such as the child’s age and gender, and indices of parental dysfunction (criminality and substance abuse). It is noteworthy that the findings from this chart review study indicated that the risk factors for BPC in school-aged children are similar to those in adolescent and adult borderline personality disorder patients (Paris, 1994; Zanarini 2000).

Cross-sectional study

The next step was to carry out a more detailed cross-sectional study investigating child diagnosis, parental factors and neuropsychological vulnerability in a separate cohort of 94 children (81 males and 13 females, with a mean age of 9.8 years) attending a child psychiatry day treatment center. We found that the prevalence of BPC in this new sample was virtually the same (43%) as in the chart review study sample (42%). Parent and teacher ratings of behavior problems indicated that children with BPC were more likely than the comparison group of children to exhibit the mixture of impulsive, affective, and cognitive symptoms that define the borderline construct, with higher scores on scales measuring thought problems, anxiety and depression, social problems and aggressive behavior. These findings support the construct validity of BPC, even though BPC overlaps with a number of known DSM-defined disorders that are themselves heterogeneous, including conduct disorder, oppositional-defiant disorder and attention deficit disorder. The results of the cross-sectional study also supported our earlier findings that parental neglect and childhood sexual abuse were more prevalent among children with BPC (Guzder et al., 1999).

There were significant differences between the two groups on scales drawn from standard neuropsychological measures (Paris et al., 1999). Results from the Continuous Performance Test and the Wisconsin Card Sorting Test demonstrated that children with borderline pathology show deficits in executive function, particularly their ability to sustain attention, plan, and think flexibly. These difficulties parallel the clinical phenomena often seen in adolescents and adults diagnosed with borderline personality disorder, such as impulsive and rigidly categorical thinking. Based on our research findings, we concluded that both psychological trauma and deficits in executive functioning make significant and independent contributions to the variance in borderline pathology of childhood (Zelkowitz, Paris, Guzder, & Feldman, 2001).

Adolescent Follow-up

Our ongoing research involves a re-assessment of the cross-sectional sample of 94 children in adolescence. Preliminary analyses indicate that parents of the adolescents with a history of BPC rate their adolescents as more functionally impaired, with more internalizing and externalizing problems, such as thought problems and delinquent behavior (Zelkowitz et al., 2004). These results support our proposition that the diagnostic construct BPC may be of prognostic importance.

Neuropsychological risk factors

In general, our research is informed by a stress-diathesis model (Monroe & Simons 1991; Paris, 1999). We hypothesize that children with BPC suffer from a combination of temperamental vulnerability and environmental adversities such as trauma. While it is possible that life events cause neuropsychological deficits, children with BPC may also have abnormalities in brain “wiring,” due to pre- or perinatal insult or to genetic predisposition. Psychosocial risk factors could then act as environmental stressors, which, when combined with neurobiological vulnerabilities, would shape the clinical syndrome of borderline pathology. Clarification regarding how neuropsychological vulnerabilities and trauma interact in development, or whether a kindling effect is part of the course of the BPC, is needed.

To address this question, we have undertaken a pilot study to extend our understanding of risk factors for BPC by making a more precise determination of neuropsychological impairment in these children, and assessing their parents for similar vulnerabilities. We will further explore how the pattern of neuropsychological deficits associated with BPC might be related to early psychological trauma. While we cannot ascertain if these neuropsychological findings originate in genetics, pre- or perinatal factors, or trauma sequelae, we can further understand the interaction of several environment and constitutional influences, in an effort to define treatment needs and develop early intervention programs.

CONCLUSION

Children who are characterized by the construct BPC are highly symptomatic and difficult to treat. Research suggests that these children engage in high-risk behaviors, and they appear to have a poor long-term prognosis. The assessment of borderline pathology in children is seldom undertaken systematically by child psychiatrists, even though this syndrome may be a precursor to various DSM-IV Axis II disorders in adolescents and adulthood. Since impulsive symptoms and negative affective states are a prominent feature of BPC, it is possible that future longitudinal research will document that these children may be at particular risk for developing Cluster B Personality disorders. From a clinical standpoint, a focus on BPC symptom patterns may diagnostically define a group of high-risk children, as well as direct our approach to their treatment. Although adult patients with BPD are often treated with SSRI’s or other medication, current concerns regarding the possible dangers of psychophar-
macological interventions with children may further motivate researchers to identify alternative therapeutic strategies for children with BPC.

REFERENCES


