Risk Factors for Borderline Pathology in Children

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ABSTRACT

Objective: To examine risk factors associated with borderline pathology in latency-age children.

Method: The subjects were 98 children assessed for day treatment. Borderline subjects were identified in a chart review using the Child Diagnostic Interview for Borderlines, which divided the sample into borderline (n = 41) and nonborderline (n = 57) groups. Functional levels were assessed by Children's Global Assessment Scale scores. The risk factors were also rated by chart review; all subjects were given a cumulative abuse score and a cumulative parental dysfunction score.

Results: Both groups demonstrated severe functional impairment. The risk factors that differentiated the borderline group were sexual abuse, physical abuse, severe neglect, and parental substance abuse or criminality. Sexual abuse and severe neglect were significant in multivariate analysis. Cumulative abuse and cumulative parental dysfunction scores were both higher in the borderline group.


According to DSM-IV (American Psychiatric Association, 1994), one can diagnose personality disorders before the age of 18 years when “maladaptive personality traits appear to be pervasive, persistent, and unlikely to be limited to a particular developmental stage or an episode of an Axis I disorder.” This restriction reflects the fact that maladaptive personality traits in children need not continue into adulthood. On the other hand, if it could be shown that specific forms of personality psychopathology in childhood do in fact lead to similar problems in adulthood, and are also associated with the same risk factors, then this would provide support for the continuity of personality disorders between childhood and adulthood. In fact, it could potentially be useful to diagnose personality disorders if such constructs account for a broad range of symptomatology, and are more appropriate descriptors than multiple comorbid diagnoses. However, the question as to whether personality disorders in childhood are the same entities as in adulthood is an empirical one. The present study will therefore examine borderline pathology in children, to address the issue of whether it might be a precursor of borderline personality in adults.

Borderline personality disorder (BPD) is often first recognized in late adolescence (Paris, 1994). “Borderline” pathology in latency-age children, labeled as such because of its resemblance to borderline personality in adults, has been frequently described in the clinical literature (Bemporad et al., 1987; Kernberg, 1991; Robson, 1983).

It is not known, however, whether borderline pathology is truly the same in children as in adults. The earliest descriptions of “borderline children” (Kernberg, 1983; Kestenbaum, 1983; Pine, 1974) may have been overly broad (Petti and Vela, 1990). Follow-up studies (Loftgren et al., 1991) indicate that the broad category of borderline children tend to develop personality disorders in adulthood but do not necessarily develop BPD. Petti and Vela (1990) concluded that BPD in childhood is heterogeneous. However, there could be a core group that has closer parallels with the adult disorder.
One way of resolving this question would be to examine the risk factors for borderline pathology in children. There is some previous evidence for an association of borderline pathology in childhood with biological and psychological risk factors. The presence of biological factors is suggested by findings from psychological and neurological testing, which indicate that borderline children more frequently show “soft” signs of organicity such as learning disabilities, attention deficit disorder, and abnormal EEG patterns (Petti and Vela, 1990).

There are also a number of psychological risk factors that have been identified for borderline pathology in children. The clinical literature on psychological risk factors in borderline children had suggested that these children come from dysfunctional families characterized by trauma, neglect, and separation (Bemporad and Cicchetti, 1982; Kestenbaum, 1983). More recently, empirical research has shown that sexual and physical abuse is common among children and adolescents with BPD diagnosed using DSM criteria (Goldman et al., 1992), and the parents of these children are more likely to demonstrate major psychopathology, particularly depression, substance abuse, or antisocial personality (Goldman et al., 1993).

The risk factors for BPD that have been identified in adult populations are similar to those described in the above studies of children. There are no specific biological markers in adults, although a number of studies have found “soft” signs of neurological impairment, such as impulsivity, cognitive inflexibility, poor self-monitoring, and perseveration, to be more prevalent in these patients (van Reekum et al., 1993). It has not been established whether these abnormalities are congenital or are acquired through brain injury. Moreover, a large series of systematic retrospective studies of the childhood experiences of adults with BPD have described a fairly consistent picture of the psychological risk factors for the disorder. These include traumatic experiences such as sexual abuse (Brier and Zadli, 1989; Byrne et al., 1990; Herman et al., 1989; Links et al., 1988b; Ludolph et al., 1990; Ogata et al., 1990a; Paris et al., 1994a,b; Shearer et al., 1990; Weaver and Clum, 1993; Westen et al., 1990; Zanarini et al., 1989), physical abuse (Herman et al., 1989; Links et al., 1988b; Paris et al., 1994a,b; Weaver and Clum, 1993; Westen et al., 1990), emotional neglect (Goldberg et al., 1985; Zweig-Frank and Paris, 1991), as well as histories of early separation or loss (Bradley, 1979; Ogata et al., 1990b; Paris et al., 1988; Zanarini et al., 1989). In addition, high rates of major psychopathology in the parents of adult borderline patients, most particularly depression or impulsive spectrum disorders such as antisocial personality disorder, BPD itself, and substance abuse, have been demonstrated by data derived from direct interviews (Links et al., 1988a) or pedigree analyses (Zanarini, 1993).

It is possible that a childhood onset of borderline pathology might be associated either with a different pattern of risk factors or with a greater degree of severity for the same risk factors than in the adult form of the disorder. Borderline pathology in childhood might, for example, reflect either a stronger organic component or the presence of more severe psychological risk factors. The psychological risks might include severe parental psychopathology or multiple cumulative trauma associated with highly dysfunctional families. These associations were in fact suggested by the findings of earlier studies conducted in our center examining the children of mothers with adult BPD (Feldman et al., 1995; M. Weiss, P. Zelkowitz, J. Vogel et al., unpublished).

One of the problems of researching this question is that different researchers have different criteria for the borderline diagnosis. There have been, in fact, several sets of operationalized criteria (Bemporad and Cicchetti, 1982; Greenman et al., 1986; Vela et al., 1983). However, formal diagnosis requires the use of the standard DSM-IV criteria, which describe a disorder characterized by affective instability, impulsive behaviors such as parasuicide, unstable relationships, and transient paranoid or dissociative symptoms (American Psychiatric Association, 1994). The problem is that since personality disorders are rarely diagnosed in children, these criteria are not fully appropriate to this age group. Previous researchers have therefore modified the criteria somewhat, using as guides examples of child psychopathology (Goldman et al., 1992).

The method of identifying borderline children in the present study (Greenman et al., 1986) will be the Child Diagnostic Interview for Borderlines (C-DIB-R), an adaptation for children of a widely researched semistructured interview for borderline diagnosis in adults (Gunderson and Kolb, 1978). Because the adult instrument has been shown to be a specific and sensitive diagnostic tool, as well as to discriminate between
borderline and nonborderline personality disorders on
many other variables (Zanarini et al., 1989), it is
possible that a parallel measure for children might have
some of the same advantages. On the other hand, this
method may or may not describe the same population
of children defined by the DSM criteria (Petti and

There has been no empirical examination of the risk
factors for borderline pathology in a clinical cohort of
latency-age children. Previous studies (Goldman et al.,
1992, 1993) have combined children of both latency
age and adolescence. Since adolescent cases are phenom­
enologically more similar to adult BPD, it would be
important to examine preadolescent borderline children
separately. The present study therefore examined risk
factors in a sample of children in psychiatric day
treatment. It is also essential that the risk factors be
rated blind to indices of borderline pathology and that
the comparison group have levels of psychopathology
comparable with those of the borderline group, to
determine whether the risk factors are specific to borde­
line pathology in children. The risk factors measured
here included many of those that have been described
in the literature on borderline children. Biological
factors were indirectly assessed by examining the fre­
cuency of specific developmental learning disabilities.
Psychological risk factors included trauma, such as
physical and sexual abuse, as well as emotional neglect
and parental dysfunction.

METHOD

Subjects

The subjects were 98 patients (79 boys and 19 girls), aged from
7 to 12 years. These subjects were consecutively referred for
admission to a child psychiatry day treatment center at an urban
teaching hospital and were evaluated over a period of 24 months.

Measures

The subjects were divided into borderline and nonborderline
groups using the child version of the retrospective Diagnostic
Interview for Borderlines (C-DIB-R), an instrument designed to
identify borderline children through chart review (Greenman et al.,
1986). The C-DIB-R has a structure and content that parallel the
adult version of the DIB (Gunderson and Kolb, 1978). It consists
of 24 items that yield five subscales: Social Adaptation, Impulsivity,
Affect, Psychosis, and Interpersonal Relations. A score of 7 or
more is used as the cutoff for borderline pathology.

All ratings were made by a clinician familiar with this instrument,
who was blind to all other measures (K.M.). Interrater reliability
for group assignment in this sample was established through the
use of a second rater (P.Z.) on a subsample of 10 cases, with a κ
of .62. As a further measure of reliability, clinicians at another
hospital in our network were asked to review 15 of the patient
charts in the present study and to assign C-DIB-R scores. The κ
for group assignment was .72.

There were 41 children in the borderline group and 57 in the
nonborderline group. The mean ages for the two groups were 10.0
and 9.6, respectively, which were not significantly different (r =
-1.6, df = 96, not significant). Nor was there any difference
between the groups in gender distribution, with 73% of the
borderline group and 86% of the nonborderline group being male.

Clinical diagnoses according to DSM-III-R criteria (American
Psychiatric Association, 1987) were made at intake for the subjects
in both groups by an experienced child psychiatrist (J.G.), who
assessed all the cases. (Since personality disorders are not generally
diagnosed for children, they were not recorded in the charts.)
The functional status of each child was scored by the same clinician
(J.G.), based on the Children's Global Assessment Scale (CGAS)
(Shaffer et al., 1983).

Risk Factors

Risk factors were assessed through a separate chart review carried
out by two experienced clinicians (J.G., J.P.), who were both blind
to group assignment by the C-DIB-R. The charts included a
detailed clinical assessment, with specific questions directed toward
psychological trauma, interviews with parents to determine family
functioning and parental psychopathology, as well as a battery of
tests for psychoeducational assessment. Ratings for all risk factors
were made by consensus between the two raters and were scored
dichotomously for all variables.

Three categories of risk factors were documented. The first
group related to health and schooling, including (a) the presence
of diagnosed learning disabilities; (b) change of schools because of
behavior problems; and (c) history of hospitalization for any reason.
The second group related to psychological trauma, including (a)
referral to Youth Protection authorities for any reason; (b) sexual
abuse of any kind; (c) physical abuse by parents; (d) verbal abuse
by parents; (e) severe neglect (defined as the significant failure of
parents to provide adequate supervision, protection, and physical
care); and (f) foster placement. A third set of risk factors was
termied parental dysfunction, including (a) substance abuse; (b)
criminality; (c) history of multiple separations; and (d) parental
divorce.

Since we were particularly interested in trauma as a risk factor,
and since many children experienced more than one type of abuse,
each child was assigned a cumulative abuse score which was the
sum of all categorically measured occurrences of physical, sexual,
and verbal abuse, as well as of severe neglect. Thus cumulative
abuse scores ranged from 0 to 4. Cronbach's α for this scale was .72.

We also determined scores for cumulative parental dysfunction,
which were calculated by summing the occurrences of parental
separations, divorce, substance abuse, and criminal history,
and which also ranged from 0 to 4. Cronbach's α for this scale was .82.

RESULTS

Functional Levels and Axis I Diagnoses

The mean CGAS for the borderline group was 31.7
(SD = 6.8; range 21 to 50), whereas the CGAS for
the nonborderline group was 37.9 (SD = 8.5; range 11 to 51). This was a significant difference ($t = 4.0$, $df = 94.94$, $p < .001$).

The intake diagnoses of the two groups are summarized in Table 1. Only posttraumatic stress disorder was significantly more common in the borderline subjects ($\chi^2 = 12.3$, $df = 1$, $p < .001$).

### Presence of Risk Factors in Borderline and Nonborderline Children

Table 2 presents the findings for the three sets of risk factors in the two groups.

**Child Health and Education.** Chi-squares showed that there were similar proportions of children with diagnosed learning disabilities in both groups. While a majority of children in both groups had repeated a grade, a higher proportion of borderline children had been required to change schools because of behavioral or emotional problems. Borderline children were no more likely to have been hospitalized because of illness.

**Trauma.** Chi-squares showed that there were equally high rates of verbal abuse in both groups of children but that sexual abuse, physical abuse, and severe neglect occurred significantly more frequently among borderline children. Significantly more children in the borderline group had also been referred to Youth Protection authorities and had been in foster placement.

**Parental Dysfunction.** Chi-squares showed that marital instability, as measured by frequent separations and divorce, was not significantly different among the parents of children in each group. However, borderline children were more likely than the comparison group to have parents with histories of substance abuse or criminality.

### Cumulative Abuse and Cumulative Parental Dysfunction as Related to Borderline Pathology

There was a significant difference in the proportions of children with borderline pathology at different levels of cumulative abuse, so that children with more types of abuse were more likely to be in the borderline group ($\chi^2 = 18.9$, $df = 4$, $p < .001$).

Cumulative abuse was correlated with cumulative parental dysfunction ($r = .66$, $p < .001$). Children with high cumulative parental dysfunction scores were more likely to be in the borderline group ($\chi^2 = 17.3$, $df = 4$, $p < .01$). Children who had not been abused were significantly less likely to have experienced parental...
separations or divorce or to have parents with histories of substance abuse or criminality.

Predictors of C-DIB-R Scores

Total C-DIB-R scores can be considered as measures of the severity of borderline pathology. There were significant Pearson correlations between C-DIB-R scores and cumulative abuse scores \((r = .36, p < .001)\), and between C-DIB-R scores and cumulative parental dysfunction scores \((r = .23, p < .05)\). There was also a significant correlation between C-DIB-R scores and age \((r = .27, p < .01)\). Finally, there was a significant relationship between gender and C-DIB-R scores \((t = -3.2, df = 96, p < .002)\), with females having higher scores.

Regression analysis was then used to determine the relative contributions of child age and gender, cumulative abuse, and cumulative parental dysfunction to the presence of borderline pathology, as assessed by total C-DIB-R score. The overall equation was significant, \(F(33) = 7.2, p < .0001\), multiple \(r = .49\). Cumulative abuse, gender, and age were all significant independent predictors of C-DIB-R score, with \(\beta\) values of .28, .25, and .20, respectively. Cumulative parental dysfunction made no independent contribution to the variance.

DISCUSSION

Our results indicate that psychological risk factors for borderline pathology in children are similar to those described for adult BPD. The overall question of the continuity of this pathology between childhood and adulthood could only be fully resolved, however, by a prospective follow-up study of these children. If it could be shown that borderline pathology in children is a precursor of adult BPD, then it would be of clinical importance to make a borderline diagnosis early in life, since, as pointed out by Kernberg (1990), children with moderate or severe psychopathology rarely outgrow such symptoms.

Whether or not there is continuity between childhood and adulthood, several of the findings reported here reflect the severe effects of borderline pathology in children on several measures of functioning. Thus, the borderline group had more frequent school changes, more frequent foster placements, and more frequent referral to Youth Protection authorities. Although there was a statistically significant difference in the CGAS scores between the borderline and nonborderline groups, this difference was unlikely to be clinically significant. Both the borderline and the nonborderline subjects were functioning at very low levels, with mean CGAS scores between 30 and 40, indicating major impairments in functioning in several areas. Furthermore, our nonborderline group was probably more similar to the borderline group in functional level than the general outpatient population studied by Goldman et al. (1992, 1993). Therefore, any differences found between these two groups could be more specific to borderline pathology, rather than associated only with a decreased functional level.

There was an absence of differences between the groups, with a single exception, for Axis I diagnoses. This suggests that borderline pathology in children cannot be equated simply with an associated behavioral disturbance, such as the presence of conduct disorder, which was equally frequent in both groups. The one diagnosis that was more frequent in the borderline children, posttraumatic stress disorder, probably reflected the higher levels of trauma, especially sexual abuse, in the borderline subjects. However, the construct of PTSD does not account for all the clinical phenomena seen in adult borderline patients (Gunderson and Sabo, 1993), nor is there sufficient evidence to consider adult BPD as a chronic form of PTSD (Paris, 1994).

We did not find group differences on our measures of biological risk factors in this population. However, our chart review methodology was based on data that were not specifically collected to document such risk factors, and it was therefore insufficiently comprehensive to test this hypothesis. The one measure that we did use to assess organicity, the presence of specific developmental learning disabilities, lacked specificity and did not differentiate between the two groups.

However, we did find significant differences between the groups for several of the psychological risk factors. In the first place, there was a higher frequency of childhood sexual abuse in the borderline subjects. This difference was also significant in multivariate analysis, indicating that sexual abuse has an independent effect in this population. These findings resemble the results of studies of adult BPD (e.g., Herman et al., 1989; Ogata et al., 1990a; Paris et al., 1994a,b) which show that childhood sexual abuse is the one risk factor most specific to adult BPD. There was also a significant
difference for physical abuse, which is analogous, in a sample with a majority of male children, to the results of a previous study examining risk factors for BPD in adult males (Paris et al., 1994b). There were no differences between the groups for verbal abuse.

It should be noted, nonetheless, that only 24% of the borderline subjects had been sexually abused. On the one hand, this rate is high for a population whose mean age was 10, and indeed it might even increase with time. On the other hand, childhood sexual abuse may best be understood as neither a necessary nor a sufficient condition for borderline pathology, but rather as a factor whose presence indicates a particularly high risk (Paris, 1994).

The findings that scores for cumulative abuse were higher in the borderline group place the results for sexual abuse in a broader context. These findings are very similar to those reported by Herman et al. (1989) for adults with BPD, in which a total trauma score was more strongly related to BPD than any single form of childhood trauma. As summarized by Rutter (1987, 1989), single negative experiences during childhood are weak predictors of psychopathology, whereas multiple negative experiences are strong predictors. It should be noted that childhood sexual abuse seldom occurs in isolation, but rather in the context of other risk factors, such as physical abuse, verbal abuse, and neglect.

Physical abuse was also significantly more frequent in borderline children in univariate, but not in multivariate, analysis. Severe neglect was significantly more frequent in borderline subjects in both univariate and multivariate analyses. This finding is in accordance with previous evidence from univariate studies of parental neglect in adult BPD (Paris and Zweig-Frank, 1993).

The scores for cumulative parental dysfunction were significantly greater in the borderline group. Cumulative abuse and cumulative parental dysfunction were correlated with each other, and therefore they probably represent global ratings of family dysfunction.

The finding that parental substance abuse and criminality were more common in the borderline group parallels a report by Links et al. (1988a), who found that these were the most common diagnoses in the first-degree relatives of adults with BPD. Zanarini (1993) has proposed that BPD, antisocial personality disorder, and substance abuse form an “impulsive spectrum” with a common biological substrate. It is likely that both genetic vulnerabilities and abnormal behaviors associated with parental diagnoses in the impulsive spectrum are risk factors for borderline pathology in children.

The regression on C-DIB-R scores showed that being female, being older, and having experienced more types of abuse were associated with more severe borderline pathology. The effects of gender are worthy of special note, since BPD in adults is most common in women. In this sample, the females had more severe borderline symptoms and could conceivably be more likely to develop BPD as adults. It could be that conduct-disordered boys with borderline pathology in latency age are more likely to develop antisocial personality disorder, which is primarily a disorder of males, whereas girls with similar behavioral problems are more at risk for BPD. The investigation of that possibility would require a prospective study. It is also notable that the risk factors identified in the present study, with its preponderance of males, are quite similar to those described by Robins (1966) as precursors of antisocial personality.

Furthermore, the findings could be interpreted as providing indirect support for our second hypothesis, which was that borderline pathology in childhood may be associated with more severe psychological risk factors than adult BPD. Although we did not make a direct comparison of risk factors for children versus adolescents, the high scores in the borderline group for cumulative abuse and cumulative parental dysfunction, as compared with a comparison group of highly dysfunctional children, are striking for a population of latency-age children.

Finally, the results provide some support for the utility of the C-DIB-R. Using a different population of children from that in the Greenman et al. (1986) study, we were able to show that borderline children as identified by this measure do differ from those without borderline pathology on variables that have also been found to distinguish between borderline and nonborderline adults. However, further research is needed to determine whether these are the children who go on to develop BPD in adulthood, or whether the use of other criteria sets, such as those of DSM-IV, would better define such a group.

There are several limitations to the present study. The most important was the use of a chart review methodology, since all our measures were dependent
on clinical records. The second limitation was that a number of risk factors, particularly those related to
organicity, were not examined. There is a need for a broader study in which a wider range of biological
and psychological risk factors are examined comprehensively. The preliminary findings of the present study
need to be replicated, first in a cross-sectional study, and then in a prospective design. It should also be noted
that although the raters of the risk factors were blind
to group assignment, they were not blind to the Axis I diagnoses on DSM-III-R. In addition, we did not
establish reliability for these diagnoses, nor were the patients rediagnosed during the course of their treat­
ment. Finally, more work needs to be done on the
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of mental disorders. Finally, more work needs to be done on the
number of risk factors, particularly those related to
on DSM-IV.

In spite of these limitations, the results reported
here shed some light on the risk factors associated with
borderline pathology prior to adolescence. The findings
also have clinical implications, since latency-age chil­
dren with borderline pathology would be expected to show evidence of both major trauma and parental
dysfunction.

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