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Parenting Role in the Development of Borderline Personality Disorder

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Abstract
The progressively improving understanding of the borderline personality disorder (BPD) has led to an increased interest in the better clarification of the integrated role of biological and psychosocial factors in the underlying pathophysiology of this condition. The influence of early childhood interactions and stress exposure in shaping our personalities during adulthood cannot be emphasized enough. In this review, we discuss the critical role of parenting-related factors including maladaptive parenting, parenting styles, and parenting psychopathology as early childhood influences in the developmental psychopathology of BPD. Protective factors that may impact the development of this disorder and possible preventive interventions are also briefly reviewed.

Introduction

As illustrated by the popular English proverb "child is the father of the man," the concept of how our early childhood experiences play a pivotal role in shaping our personalities as adults is well established. In children and adolescents, numerous studies have linked exposure to adverse childhood experiences, such as abuse, neglect, and household dysfunction, with negative developmental, physical, and behavioral outcomes in a dose-dependent manner [1]. A meta-analysis of retrospective studies concluded that early childhood adverse experiences are connected to psychopathology in adulthood including personality disorders, depressive and anxiety disorders [2].

Personality disorders are multifaceted mental illnesses characterized by "a pervasive, inflexible pattern of inner experience and behavior that deviates markedly from the expectations of the individual's cultural norms," resulting in functional impairment and distress [3]. Globally, personality disorders affect 6.1% of the general population [4]. The most frequently reported personality disorder in primary care and mental health settings is borderline personality disorder (BPD) [4], which is marked by a persistent pattern of emotional dysregulation, impulsivity, self-harm, unstable sense of identity, and difficult interpersonal relationships [3]. It is considered one of the most complex mental disorders, with its unique challenges in management. In this review, we focus on the role of parenting in the development of BPD in addition to reviewing the role of protective factors with a brief review of potential preventive interventions.

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Borderline Personality Disorder

BPD is believed to occur equally among men and women in the general population, although women are disproportionately overrepresented in clinical settings [4]. Prevalence ranges from 1% to 3% in the general population, 10% in outpatient settings, 20% in inpatient settings, and 9–27% in the emergency settings [5]. The exact etiology of BPD remains unclear; however, contemporary models indicate that the disorder emerges from an amalgamation of genetic, neural, behavioral, family, and social pathways [6]. Around 30–90% of patients who meet the criteria for BPD have a history of childhood traumatic events [7].

BPD typically emerges as an identifiable syndrome by late adolescence and early adulthood [8]. One systematic review critically evaluated the wide range of factors associated with increases in the subsequent risk for BPD [9]. Studies were categorized based on the type of risk examined: social factors such as poverty, stressful life events; family factors including parent psychopathology, parenting behavior/style, and family climate/parent-child relationship; maltreatment and trauma exposures (physical abuse, sexual abuse, neglect); and child factors, including cognitive ability, caregiver attachment, temperament and personality, and psychopathology. The most robust risk indicators were low socioeconomic status, stressful life events, and family adversity in the social domain; maternal psychopathology and affective parenting dimension (low warmth, hostility, harsh punishment) in the family domain; exposure to physical or sexual abuse or neglect in the maltreatment domain; and low IQ, high levels of negative affectivity and impulsivity, and internalizing and externalizing psychopathology, in the child domain [10]. For purposes of the present review, we are focusing on the parenting-related risk factors for further discussion.

Parenting-Related Factors in BPD

Maladaptive Parenting

Maladaptive parenting including childhood maltreatment, abuse and neglect, exposure to domestic violence and parental conflict are found to be prevalent psychosocial risk factors for development of BPD in children and adolescents [10, 11]. A meta-analysis of 10 studies including both adult and child populations indicated an approximately three-times increased risk of BPD in those exposed to maternal hostility or verbal abuse [10]. A prospective longitudinal study investigated the association between suboptimal parenting and parent conflict in childhood and BPD symptoms in late childhood in a large sample of 6,050 mothers and their children [11]. Multiple family risk factors were assessed using the Family Adversity Index that includes items pertaining to young maternal age, housing, financial difficulties, problematic partner relationship, maternal affective disorder, substance abuse, or involvement in crime. Suboptimal parenting factors, which have been prospectively linked to personality disorders and BPD features, included hostility, resentment, and hitting/shouting. The statistical analysis concluded that children from adverse family backgrounds, who experience suboptimal parenting and more conflict between parents, are at increased risk of BPD symptoms at 11 years.

The Children in the Community study (CIC study) is a landmark community-based prospective longitudinal investigation that explored the association of parental child-rearing behavior with risk for offspring personality disorder during adulthood over a course of 16 years [12]. The sample was comprised of 593 families from the community. Offspring were interviewed during childhood (mean age 6 years), adolescence (mean ages 14 and 16 years), emerging adulthood (mean age 22 years), and adulthood (mean age 33 years). The findings provided evidence indicating that aversive parental behavior, maladaptive family functioning (including low family cohesion), low parental affection or nurturing, and high levels of maternal-child discord during the child-rearing years may be associated with elevated offspring risk for personality disorders, including antisocial, borderline, and passive-aggressive personality disorders during adulthood. In recent papers using the data from the CIC study, it has been noted that parental personality disorders are associated with problematic parenting and are associated with symptoms and disorders in offspring. The papers have also provided further evidence that maladaptive parenting is predictive of BPD symptoms in offspring.

The Pittsburgh Girls Study is another longitudinal, community-based study of 2,451 girls who were initially recruited when they were between the ages of 5 and 8 years with the aims of testing developmental models of conduct disorder, major depressive disorder, and their co-occurrence in girls [13]. One study examined how reciprocal influences among harsh parenting, self-control, and negative emotionality between the ages of 5 and 14 years predicted the development of BPD symptoms in adolescent girls aged 14–17 years and found a positive correlation between them [13]. The study highlighted that poor self-control may exacerbate emotional problems that undermine the development of emotion regulation.

Emotional dysregulation and self-harm behaviors are among the core symptoms of BPD [3]. Maladaptive parenting is noted to be associated with deficits in emotional regulation and social cognition [6]. Caregiver-child relationships are the first relationships to allow the child to experience self-regulation of behaviors and emotions through the caregiver's actions [8]. According to Bowlby's attachment theory, attachment styles are shaped in early interactions with caregivers and are sustained by subsequent interpersonal relationships during adulthood [14]. Biologically, prefrontal and fronto-limbic regions are involved in the regulation of emotion and impulsive behavior, as well as executive cognitive functions and declarative memory [15]. The developing fronto-limbic system is affected by environmental inputs, such as the availability of early attachment relationship with caregivers to skillfully co-regulate a child's emotional distress [8]. Studies depict that fronto-limbic dysfunctions are the predominant neural substrate underlying BPD [14].

Additionally, both interview-based and self-report-based research studies have found strong links between BPD features and insecure attachment styles [16]. One study of 637 patients combined experience-driven and data-driven models and found strong support to the hypothesis that insecure attachment and maladaptive emotional regulation play a dominant role in the association between childhood trauma and BPD features [16]. Another study investigated the influence of personality organization and attachment on the relationship between childhood maltreatment and emotional functioning in 616 nonclinical adults [17]. The findings suggested that childhood trauma predicted insecure attachment and deficits in personality organization.

Parental invalidation, as proposed by Linehan [18], is another important factor for the development of BPD. As per this concept, BPD results from growing up in an invalidating environment toward the expression of emotions (e.g., minimizing or punishing parents) [18]. On the other hand, this theory also proposes that if the child's emotional expressions are consistently met with validating or supporting parental responses (such as comforting or problem-solving parents), they are less likely to develop BPD. Invalidation may vary from persistently abusive or neglectful, to a "perfect" family that minimizes or punishes negative emotional expressions, or simply a relatively normative family in which there is a poor fit between child's needs and parents' responses [19]. One study examined whether there were different effects of child emotional vulnerabilities on risk for child BPD features depending on parents' use of supportive and non-supportive responses to the child's negative emotions in a mixed-sex group of 125 children (ages 10–12 years) [19]. Children's emotional vulnerability was assessed based on parent-rated negativity/lability and emotion regulation skills and children's respiratory sinus arrhythmia and skin conductance-level reactivity to a social stressor. Children with low parent-rated negativity/lability were lowest in BPD features when parents reported high supportive and low nonsupportive reactions to the child's negative emotions reflected in both behavioral ratings and skin conductance-level reactivity. Children rated by parents as high in negativity/lability were the highest in BPD features when parents were high in supportive reactions and low in nonsupportive reactions. This suggests a possibility that high levels of support may inadvertently reinforce high emotional reactivity and suppress children's autonomous emotional regulation.

Interpersonal hypersensitivity is another symptom associated with BPD [3] and is defined as a psychobiological disposition to excessive interpersonal reactivity, with significant roles played by abandonment fears, rejection sensitivity, and intolerance of aloneness [20]. A genetic predisposition to interpersonal hypersensitivity is assumed to interact with negative relational experiences such as punitive behaviors of parents during the child's early development, resulting in relational deficits at a later age. One study examined the relationship of BPD symptoms with perceptions of caregiver criticism in a high-risk sample of 109 adolescents in a residential psychiatric treatment facility [21]. Findings suggested that adolescents with BPD symptoms may perceive their caregivers as more critical even if their caregivers do not actually exhibit high levels of criticism.

Expressed emotion (EE) is a measure of one family member's attitude toward another and comprises ratings of criticism and emotional over-involvement. High EE in family member/s predicts relapse in adult patients with mental disorders including schizophrenia, bipolar disorder, depression, and eating disorders [22]. In child populations, studies on maternal EE highlight its association with child psychopathology with especially poorer outcomes in youth with mood disorders [23]. The contrary was noted in a study assessing the predictive validity of relatives' EE in a group of patients with BPD [24]. Thirty-five patients were longitudinally followed for a year after discharge from hospital, and the clinical outcome was assessed through interviews with patients and their family members. Family members' criticism did not influence how well the patients did or re-hospitalization rates. In fact, family level of emotional over-involvement was

linked with better clinical outcomes in the BPD patients, suggesting that the association between EE and patient outcomes may be different for patients with BPD than other psychiatric conditions. A study looking at the role of parental EE targeting the child population would be beneficial to explore this further. Theoretical models highlight the importance of parental psychopathology as a determinant of maladaptive parenting practices [25] which will be discussed further in the parental psychopathology section below.

Parenting Styles

Parenting style is an essential determinant of children's coping styles, and a child's behavior varies according to different parenting styles [26]. Baumrind defined three specific parenting styles: authoritarian, authoritative, and permissive [27]. The authoritarian (high control, low warmth) parenting style is defined by harsh parenting practices, including physical punishment, yelling, and commands. The authoritative (high warmth, high control) parent exhibits firm limit-setting, yet shows compassion and warmth, and these households have bidirectional communication. The permissive (high warmth, low control) parent provides few to no commands or limits to behavior.

One study examined the relationship of parenting styles with child behavioral problems in 108 African American preschool children and found that the authoritative parenting style was associated with positive child outcome [28]. Female caregivers who reported a higher level of behavioral problems in the children were noted to have lower education and lower income. Lower education was associated with permissive and authoritarian parenting styles, whereas lower income was correlated with permissive parenting style. Other studies have noted that maternal history of childhood physical or sexual abuse seems to predict increased use of overly permissive parenting strategies [29].

A retrospective investigational study assessed 101 adolescents with BPD features (ages 14–19 years) and 44 healthy controls and the parental rearing practices of their mothers [30]. Self-reports of perceived concurrent parenting were completed by the adolescents. Questionnaires on parental psychopathology were filled by their mothers. Mothers of adolescents with BPD features reported significantly more parenting stress compared to mothers in the control group. These mothers also reported more general psychopathology and cluster C personality disorder symptoms, but no more cluster A and cluster B symptoms. The adolescents with BPD features reported significantly less emotional warmth, as well as more rejection and overprotection from their mothers compared to the control group.

Another concept aiming at explaining an evolutional perspective around BPD is behavioral ecology [31]. Behavioral ecology focuses on the variation in behavior between as well as within species and its contingency on environmental conditions. An important behavioral ecological concept, termed life history theory, concerns an organism's differential allocation of resources to physical growth and reproduction. This concept suggests that parenting approaches in BPD influenced by unstable/insecure relationship attachments or childhood adversities may be meaningful and comprehensive, sometimes even logical, when imagining a world that is dangerous and unpredictable, where a "fast and furious" lifestyle (such as unstable relationships, difficulties in emotional regulation, impulsivity, and self-injurious behaviors) may appear appropriate.

Parental Psychopathology

Family studies show a 4- to 20-fold increase in the rates of BPD diagnosis/traits among first-degree relatives of patients with BPD compared to the general population [4], while twin studies point to heritability estimates ranging from 42% (BPD traits) to 69% (full BPD criteria), signifying a strong biological predisposition [4]. No specific gene variant or biological mechanism has been exclusively associated with BPD; however, according to the classic stress-diatheses model, its onset has been suggested to depend upon the combination of a vulnerable genetic background with adverse environmental factors during childhood [32]. This is in line with the bioecological theory of Bronfenbrenner and Ceci that postulates that environmental factors, including parenting, play an important role in determining whether existing biological risk factors or diatheses will lead to the development of psychiatric disorders in the children in the future or not [33]. Abnormalities in the hypothalamic-pituitary-adrenal axis, different neurotransmission mechanisms, the endogenous opioid system, and neuroplasticity are among the biological systems involved in BPD pathogenesis that seem to be particularly affected by chronic stress in childhood [32].

Maternal depression and maternal history of trauma are independent factors strongly associated with increased rates of insecure attachment in children, with children of depressed mothers being at greater risk for internalizing disorders [34]. Maternal depression is also associated with worse treatment outcomes for psychiatri-

cally ill children care. One study looked at the direct impact of maternal depression treatment on children's symptoms [34]. The sample consisted of 62 dyads of depressed mothers and school-age children with internalizing disorders. Mothers were treated with nine sessions of psychotherapy, and children received treatment as usual in the community. Maternal improvement in depressive symptoms was associated with increased use of positive parenting strategies among mothers, leading to improvements in child functioning 6 months later. Nonetheless, the association between children's and mothers' improvement was not observed among mothers with childhood histories of sexual abuse or physical neglect, indicating difficulties in the use of positive parenting strategies by those mothers. The study findings emphasize the impact of parent's psychopathology in their parenting approaches.

Three longitudinal studies with large community-based samples pointed to the strong role of parents' psychopathology, in particular maternal BPD, as a precursor to BPD in children and adolescents [35–37]. Barnow and colleagues [35], as well as Reinelt and collaborators [36] studied large community samples (286 and 295 subjects, respectively) over 5 years, while Stepp and colleagues' [37] study included a sample of 816 subjects from the community, followed over a period of 16 years. Results were consistent in identifying maternal BPD as a predictor of BPD onset in adolescence (15 years) [35, 36] and early adulthood (24 years) [37]. The longest longitudinal study by Stepp and colleagues [37] evaluated the associations between early maladaptive family functioning, parental psychiatric diagnoses not just limited to depression, proband early-onset psychiatric diagnosis, and BPD symptoms in adulthood using data from the existing longitudinal study Oregon Adolescent Depression Project [37]. Consistent with other empirical works, all forms of maternal psychopathology including major depressive disorder, anxiety, BPD, and particular forms of paternal psychopathology including anxiety, substance use disorders, and antisocial personality disorder were associated with higher levels of proband BPD symptoms.

Parents with personality disorders may have struggles with expressing appropriate empathic responses, difficulty in maintaining a stable environment, managing interpersonal conflict, and engaging in parenting skills [38]. Particularly, BPD in mothers has been associated with lower sensitivity, emotion recognition, and parenting satisfaction, as well as higher levels of intrusiveness, overprotection, hostility, and parenting distress when compared to mothers with depressive disorder, other personality disorders, and healthy controls [39]. One study examined individual characteristics, familial experience, and psychopathology of children of mothers with BPD including temperament dimensions, perceived parenting behavior, and psychopathology [38]. Those children were found to display significantly more emotional and behavioral problems when compared with children of mothers with depression only, children of mothers with cluster C personality disorders, or children of mothers with no psychiatric condition [38]. In addition, compared to other groups, children of mothers with BPD demonstrated higher scores on the temperament dimension of harm avoidance. Moreover, they tended to perceive their mothers as being overly protective [38] which replicates the findings of other studies [30, 36]. Another significant finding was that children of mothers with BPD described themselves as having very low self-esteem.

Mentalization or reflective functioning is the process through which a person can make meaning of their own behavior and infer the mental states of others [40]. In the context of parent-child relationships, parental reflective functioning describes a parent's capacity to reflect upon their own child's internal experience and to understand their behavior. Parental reflective capacity has been found to be related to mother-infant attachment, and sensitive and responsive caregiving [41]. Impairments in reflective capacity have been implicated in various psychiatric disorders, including BPD [40, 41]. One cross-sectional study of 284 parents (94.72% female) evaluated their parental stress and competence [41]. The study concluded that parents with high proportions of BPD features experienced more stress and lower competence in their parenting role. These parents also reported more personality vulnerabilities, poorer psychological well-being, recalled more traumatic childhood experiences, were more likely to endorse insecure attachment styles, and had poorer reflective capacity. Furthermore, the newborns of these parents display greater rates of prematurity and greater attachment disorganization during infancy compared to controls.

Protective Factors

Individual characteristics, including higher intelligence, better self-regulation skills, high self-esteem, and adequate prosocial skills and family influences, such as family support and parental warmth, are associated with better outcomes when faced with adversity [42]. With most of the research being focused on the role of child-

hood adverse events in the psychopathology of BPD, studies assessing childhood protective factors are limited. One study was designed to fill the gap in this area while focusing on two goals: first, to identify the prevalence rates of childhood protective factors endorsed by adolescents with BPD compared with psychiatrically healthy adolescents and, second, to compare the prevalence rate of childhood protective factors endorsed by adolescents with BPD with adults with BPD [43]. The study sample consisted of 104 inpatient adolescents aged 13 and 17 years with BPD, matched with 60 healthy controls, and 109 inpatient adults diagnosed with BPD. Eighteen protective childhood experiences were assessed, falling under three broad categories: (1) positive relationships, including relationships with parents, siblings, and friends; (2) achievement, including competence in school, work, and sports; and (3) parental protective factors, including their close relationship with family and friends and work record. Results showed that when compared with adolescents with BPD, psychiatrically healthy adolescents were significantly more likely to endorse only 4 out of 18 protective factors that included playing a sport well, participating in a leadership role, participating in household responsibilities, and having a parent who has leisure time activities. The second main finding was that when compared with adults with BPD, adolescents with BPD were significantly more likely to endorse only 5 of the 18 protective factors. These included factors related to individual competence (i.e., having a good academic performance, participating in household responsibilities) and relationships (i.e., having a positive relationship with a parent).

Remarkably, not all children undergoing trauma or maltreatment go on to develop consequent psychopathological symptoms. This leads to the question of the presence of an innate quality in some children that is often referred to as resilience. Resilience is a broad concept that describes adaptive functioning, over time and in multiple domains, in a context of adversity and indicates that one is meeting the societal expectations [44]. One review study has proposed that rather than seeing BPD primarily in terms of the presence of impairments in attachment and mentalization, the absence of resilience should be considered as a plausible factor in the emergence of BPD that warrants further investigation [45]. The same review also suggests that individuals with BPD acquire social communication inflexibility and see it as the only possible survival strategy with considerable advantages in the short term.

The biopsychosocial model of risk and resilience purports that protective factors such as a supportive caregiver, individual sensitivity to positive cues, and better emotion regulation skills may buffer or disrupt the association between exposure to adversity and the development of negative sequelae [46]. Meta-analytic evidence indicates that children who have supportive caregivers are less likely to develop psychopathology following trauma exposure [46]. Neurobiologically, maternal buffering of threat processing has been identified as a protective effect in children, but not in adolescents [47]. Cues that signal maternal presence are associated with dampened amygdala reactivity and greater medial prefrontal cortex-amygdala functional connectivity in children, particularly those who have a supportive relationship with their mother [47].

Probable Early/Preventive Interventions

Given the compelling longitudinal studies showing that insecure infant/child attachment is associated with later psychopathology, interventions that promote children's secure attachment to their caregivers known as attachment-based interventions have the potential to contribute to prevention of psychopathology [48]. Attachment-based interventions propose preventing the transmission of insecure and/or disorganized attachment from parent to the child in one of two ways by either individual psychotherapy with the mother or psychotherapy with the mother-infant (or toddler) dyad [49]. Interventions designed with the parent as the primary patient aim to provide "corrective" attachment experiences through interactions and experiences with the therapist. In the other approach, the therapist observes the interactions between the mother and the child to enable the mother to link her past experiences and own attachment style to her current relationship with her child. There are several examples of this type of parent-infant relationship psychotherapy, including Watch, Wait and Wonder, Preschooler-Parent Psychotherapy, and Circle of Security. Mentalization-based therapy is another evidence-based therapy that was developed using the attachment-based model with the underlying premise being impaired attachment is linked to impairment in mentalization. However, the utility of these interventions when offered alone for mothers with BPD and their children without any psychoeducation and parent skills training is limited.

Many of the guiding principles of family psychoeducation, including forming support networks with other in-

dividuals in the group as well as learning about the targeted individual (child developmental milestones), will be relevant for a parent-child intervention for mothers with BPD [49]. A pilot multiple family group program designed to target BPD with a family psychoeducational approach reported improvements in family communication and burden after 6 months of treatment [50]. Another empirical approach is multigroup family skills training as part of dialectical behavior therapy for adolescents [51]. The other important intervention targets for this population will be to assist mothers in setting routines for themselves and their child, facilitating skills to promote consistency in warmth and nurturance and mindfulness-based parenting skills [49]. Boosting children's protective factors prior to and during child abuse treatment may reduce trauma-related distress following exposure to adversity [46]. Resilience enforcement remains another potential area that needs further research.

Conclusions

With the increasing body of literature depicting the impact of childhood adversity being inter-related to long-term physical and psychopathological conditions, including BPD, the demand for early identification and intervention has increased more than ever. This review highlights the biological and psychosocial predispositions that may lead to the development of BPD with emphasis on the role of parenting. With improved understanding of the causative mechanisms and advancements in the understanding of the protective factors, a shift of focus on early interventions seems to be the direction that needs more attention.

Conflict of Interest Statement

The authors report no conflict of interest.

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