Correlates of the CBCL-dysregulation profile in preschool-aged children

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Abstract

Background—A growing literature indicates that the Child Behavior Checklist-Dysregulation Profile (CBCL-DP) identifies youths with heightened risk for severe psychopathology, comorbidity, and impairment. However, this work has focused on school-age children and adolescents; no studies have examined whether preschool-aged children with the CBCL-DP exhibit a similar constellation of problems.

Method—Using a community sample of preschoolers, we compared children with ($N = 61$) and without ($N = 488$) the CBCL-DP on a broad range of variables assessed using multiple methods.

Results—Univariate analyses revealed numerous differences between children with the CBCL-DP and their peers on psychiatric symptomatology, temperament, parenting behavior, and parental personality, psychopathology, and marital functioning. In multivariate analyses, children with the CBCL-DP exhibited greater temperamental negative affectivity and lower effortful control. They also had more depressive and oppositional defiant symptoms, as well as greater functional impairment. Parents of CBCL-DP children reported engaging in more punitive, controlling parenting behavior than parents of non-profile children.

Conclusions—In a non-clinical sample of preschoolers, the CBCL-DP is associated with extensive emotional and behavioral dysregulation and maladaptive parenting.

Keywords

CBCL; dysregulation; preschool; children; comorbidity

Introduction

The Child Behavior Checklist-Dysregulation Profile (CBCL-DP; Althoff, Verhulst, Rettew, Hudziak, & van der Ende, 2010) refers to a pattern of elevated scores on the Attention Problems, Aggression, and Anxiety/Depression subscales of the CBCL. It was originally

proposed as a means of identifying youth with bipolar disorder (Biederman et al., 1995; Mick, Biederman, Pandina, & Faraone, 2003). However, recent studies indicate that the CBCL-DP is associated with a variety of forms of psychopathology (Youngstrom, Youngstrom, & Starr, 2005). Youth with this profile exhibit elevated rates/levels of anxiety and disruptive behavior disorders (McGough et al., 2008; Volk & Todd, 2007), marked impairment (Diler et al., 2009) and suicidality (Althoff, Rettew, Faraone, Boomsma, & Hudziak, 2006; Volk & Todd, 2007).

Several recent studies have examined longitudinal outcomes of children with the CBCL-DP. In a sample of offspring of parents with mood disorders, Meyer et al. (2009) found that while 31% of children with the profile developed bipolar disorder as young adults, the profile also predicted later ADHD, anxiety and personality disorders, comorbid psychopathology, impairment, and suicidal thoughts/behaviors. In a 7-year follow-up of ADHD patients and siblings, Biederman et al. (2009) reported that the CBCL-DP predicted later bipolar disorder, major depression, conduct disorder, impaired functioning, and psychiatric hospitalization. In a German sample, Holtmann et al. (2011) found that children with the profile were at risk for ADHD, mood and substance use disorders, poor functioning, and suicidality, but not bipolar disorder, at age 19. Finally, in a large sample of Dutch children, Althoff et al. (2010) reported that the profile predicted greater mood, anxiety, and disruptive behavior disorders, as well as increased substance use, in adulthood.

Although these studies have converged on a consistent picture, there are at least two major gaps in the literature. First, most studies have focused on the psychopathological correlates of the profile. We are aware of only one study that has examined psychosocial features associated with the CBCL-DP. In a large clinical sample of 4–18 year olds, Jucksch et al. (2011) found that the profile was associated with greater familial psychopathology, and more problems with interfamilial relationships, family communication, upbringing, and the immediate environment. Second, existing studies have focused on school-age children and adolescents. No studies have examined whether preschool-aged children with the CBCL-DP exhibit a similar constellation of problems. Such data are important for providing a more complete picture of the development and implications of the profile.

The current study extends the literature by examining the correlates of the CBCL-DP in a large community sample of preschool-aged children. Preschoolers with and without the profile are compared across multiple domains, including symptomatology, temperament, parental personality and psychopathology, parenting behavior, life stress, and marital functioning. Multiple methods were employed, including questionnaires, semi-structured interviews, and laboratory observations.

Given the paucity of data on the CBCL-DP in preschoolers, our hypotheses were tentative. Based on research with older youth, we hypothesized that preschoolers with the profile would exhibit greater internalizing and externalizing symptomatology and functional impairment. In addition, based on the broader literature on dysregulation in preschoolers (Eisenberg, Spinrad, & Eggum, 2010), we expected CBCL-DP preschoolers to have more difficult temperaments (particularly negative affectivity and low effortful [or voluntary] control, and to come from environments characterized by maladaptive parenting, parental psychopathology and personality problems, and marital discord.

Method

Participants

Participants were a community sample of 549 three-year-old children and their parents recruited through commercial mailing lists. The children's mean age was 3.5 years ($SD =$

0.3). 54% of the children were male, and 87% were Caucasian. 94% of the parents were married. 55% of mothers and 47% of fathers had 4-year college or graduate degrees. Eligible families had a 3-year-old child who lived with at least one English-speaking biological parent and did not have a significant medical condition or developmental disability. All parents gave informed consent.

Procedure

Participants completed two 2½ hr laboratory visits and three telephone interviews. During the initial visit, the primary caregiver completed questionnaires while the child participated in a laboratory assessment of child temperament. The second visit included a structured observation of parent-child interactions. The primary caregiver also completed a semi-structured diagnostic interview assessing child psychopathology by telephone. In addition, structured diagnostic interviews were conducted by phone with each parent to assess their own history of psychopathology. Co-parents completed questionnaires at home and returned them by mail.

Measures

CBCL-DP—Child Behavior Checklist 1½–5 (CBCL/1½–5) The CBCL/1½–5 (Achenbach & Rescorla, 2000) is a 99-item parent-report checklist assessing emotional and behavioral problems in 1½ to 5-year-old children. As discussed below, we used mothers' reports ($N = 549$) to score the three syndrome scales that comprise the CBCL-DP: Attention Problems (five items, $\alpha = .63$), Anxious/Depressed (eight items, $\alpha = .70$), and Aggressive Behavior (19 items, $\alpha = .90$). In older youth, the CBCL-DP scales exhibit impressive stability over a 5-year period ($r = .66$; Boomsma et al., 2006).

Domain 1: Child Temperament

Children's Behavior Questionnaire (CBQ)—The CBQ (Rothbart, Ahadi, Hersey, & Fisher, 2001) is a widely used 194-item parent-report measure of temperament for 3 to 7-year-old children. It assesses three broad dimensions: Negative Affectivity (e.g., anger/frustration, sadness, fear, low soothability), Extraversion/Surgency (e.g., high intensity pleasure, impulsivity, activity, low shyness), and Effortful Control (e.g., inhibitory control, attentional focusing, low intensity pleasure). It was completed by 516 mothers and 399 fathers. Coefficient alphas for mother and father-reports were .77 and .76 for Negative Affectivity (62 items), .82 and .80 for Extraversion/Surgency (64 items), and .90 and .87 for Effortful Control (65 items).

Laboratory temperament assessment battery (Lab-TAB)—During the laboratory visit, children participated in 12 episodes from the Lab-TAB (Goldsmith, Reilly, Lemery, Longley, & Prescott, 1995) designed to elicit a variety of emotional responses. Examples of episodes include popping giant soap bubbles with the experimenter, being left alone in a room with a stranger, being given a snack but having to wait before eating it, and receiving a gift in a large box that turned out to be empty (see Dougherty et al., 2011). Episodes were videotaped and later coded. The child's affect and behavior were rated for each episode and ratings were aggregated across episodes. Principal components analysis was performed on 23 aggregated variables and five components were extracted (Dougherty et al., 2011). The components and the three variables with the highest loadings on each were: Sociability/Assertiveness (sociability, initiative, dominance), Dysphoria (anger, hostility, sadness), Fear (fear, behavioral inhibition, clinginess), Exuberance (positive affect, anticipatory positive affect, interest), and Disinhibition (impulsivity, noncompliance, low inhibitory control). Interrater reliability for the five component scores, indexed by the intraclass coefficient (ICC), ranged from .82–.92 ($n = 35$).

Domain 2: Child psychopathology and functioning

Preschool-age psychiatric assessment (PAPA)—The PAPA (Egger, Ascher, & Angold, 1999) is a semi-structured interview assessing parent-reported psychopathology in 2 to 5-year-old children. The PAPA was administered to mothers ($N = 531$) by telephone. Semi-structured diagnostic interviews with parents regarding child psychopathology have exhibited comparable results when conducted face-to-face and by telephone (Lyneham & Rapee, 2005). Interviews were conducted by graduate students in clinical psychology. Four scales were used in this study: depressive, anxiety, ADHD, and ODD symptoms. These scales were computed by summing the scores for the symptoms included in each diagnostic category. In addition, impairment ratings in five domains (relationships with parents, siblings, and peers; school functioning; age-appropriate activities) were summed for a total functional impairment score. To assess interrater reliability, audiotapes of 21 randomly selected interviews were independently rated by a second diagnostician; ICCs were .99 for anxiety, .98 for depression, .99 for ADHD, 1.00 for ODD, and .91 for functional impairment.

Vineland adaptive behavior screener socialization subscale—Prior to the PAPA, the Vineland socialization subscale (Sparrow, Carter, & Cicchetti, 1987) was administered to mothers ($N = 531$). This 15-item scale assesses developmentally relevant interpersonal interactions, play, sensitivity, manners, and responsibility. Higher scores indicate poorer functioning. Coefficient alpha was .51.

Vocabulary skills—The Peabody Picture Vocabulary Test (PPVT; Dunn & Dunn, 1997) and the Expressive One Word Picture Vocabulary Test (EOWPVT; Brownell, 2000) were administered during the first laboratory visit to assess children's receptive and expressive vocabulary skills, respectively ($N = 553$).

Domain 3: Parental psychopathology

Structured clinical interview for DSM-IV (SCID)—The non-patient SCID (First, Spitzer, Gibbon, & Williams, 1996) was administered by telephone to 539 mothers and 447 fathers by masters-level clinicians. When one parent was not available, the other completed a family history interview about that parent. Based on audiotapes of 30 randomly selected interviews, interrater reliability (kappa) for lifetime diagnoses were .93 for depressive disorders, .91 for anxiety disorders, and 1.00 for substance use disorders.

Diagnostic Inventory for Depression (DID)—The DID (Zimmerman, Sheeran, & Young, 2004) is a 22-item self-report measure of current depressive symptoms. It was completed by 473 mothers ($\alpha = .85$) and 397 fathers ($\alpha = .88$).

Domain 4: Parental personality

Multidimensional personality questionnaire-brief form (MPQ-BF)—The 155-item MPQ-BF (Patrick, Curtin, & Tellegen, 2002) assesses 11 primary traits comprising three higher-order factors: Positive Emotionality (PE; 48 items), Negative Emotionality (NE; 36 items), and Constraint (36 items). It was completed by 475 mothers and 401 fathers. Coefficient alphas for mothers and fathers, respectively, were $\alpha = .86$ and .89 for PE; $\alpha = .84$ and .89 for NE; and $\alpha = .69$ and .80 for Constraint.

Parents also completed an informant version of three of the MPQ-BF's primary trait scales. The three scales were selected because each is a strong marker of one of the higher-order factors (Patrick et al., 2002): Wellbeing (12 items; $\alpha = .87$ and .86 for mother- and father-

reports, respectively), stress reaction (12 items; α = .85 and .84), and harm avoidance (12 items; α = .82 and .71) are markers of PE, NE, and constraint, respectively.

Domain 5: Parenting

Teaching tasks—In the parent-child interaction session ($n = 491$), mother and child engaged in six structured tasks that required the parent's support for the child to complete the task successfully (Egeland et al., 1995). Examples of tasks include reading a book to the child and discussing it; helping the child construct a large shape using small blocks of various shapes; and helping the child use an Etch-a-Sketch to trace a maze. Interactions were videotaped, and research assistants coded a number of characteristics of parent behavior, child behavior, and the dyadic relationship for each episode, which were then aggregated across tasks. Four variables representing the range of parenting behaviors elicited by these tasks were selected for the analyses: maternal support (α = .88), maternal positive affect (α = .84), maternal hostility (α = .77), and quality of parent-child relationship (α = .86). Interrater ICCs (n = 55) for the four variables were .85, .66, .83, and .79, respectively.

Parenting Styles and Dimensions Questionnaire (PSDQ)—The PSDQ (Robinson, Mandleco, Olsen, & Hart, 2001) is a 37-item questionnaire designed to assess three styles of parenting: authoritative (warm/supportive, but establishes structure/limits), authoritarian (unsupportive, controlling, and punitive), and permissive (warm/supportive, but lacking structure/limits). It was completed by 501 mothers and 398 fathers. α for mother- and father-reports were .82 and .87 for Authoritative (15 items), .74 and .78 for Authoritarian (12 items), and .74 and .70 for Permissive (five items) style.

Domain 6: Marital adjustment and life stress

Dyadic Adjustment Scale (DAS)—The DAS (Spanier, 1976) is a 32-item self-report measure of marital satisfaction. It was completed by 374 mothers and 331 fathers. α was .95 and .94 for mother- and father-reports, respectively.

Life stressors—During the PAPA, mothers were asked about the occurrence of 41 life stressors involving the child in the previous 6 months and during the child's lifetime. Interrater ICCs were .99 for number of stressors during the child's lifetime, and .93 for the 6 months prior to the assessment ($n = 21$).

Data analysis

The CBCL-DP was defined by a score of ≥ 180 on the summed t-scores of the Attention Problems, Aggressive Behavior, and Anxious/Depressed subscales. While higher cutoffs have been employed in studies using clinical samples (e.g., sum ≥ 210 or each scale ≥ 70), lower cutoffs have been used in non-clinical samples (e.g., sum ≥ 180 or each scale ≥ 60) and have been associated with significant impairment (Meyer et al., 2009). To ensure that results were not specific to this cutoff, we analyzed the data using cutoffs of 1 SD above the mean (≥ 175; 82 cases) and median (≥ 170; 113 cases), and using the summed t-scores as a quantitative variable. The results were similar to those reported below.

Of the 549 children whose mothers completed the CBCL/1½–5, 61 (11.1%) met criteria for the CBCL-DP; of the 406 children whose fathers completed the CBCL, 26 (6.4%) met criteria for the profile. Consistent with other studies (e.g., Althoff et al., 2010), agreement between mothers and fathers was fair ($κ = .23$, $p < .001$). We report results based on mothers' reports to maximize sample size. Analyses using father's ratings produced similar, albeit somewhat weaker, results.

Independent samples *t*-tests were conducted between children with and without the CBCL-DP on all variables in each of the six domains. Benjamini and Hochberg's (1995) procedure was used to correct for multiple comparisons within domains. To determine the unique associations of variables with the CBCL-DP, logistic regression analyses were performed using profile group as the dependent variable and variables that significantly distinguished the two groups in the bivariate analyses as independent variables. As stronger associations are expected between profile group and variables assessed using the same informant (mothers), separate models were conducted for independent variables based on mothers' reports and independent variables based on other methods (fathers' reports and laboratory observations).

Results

Children with and without the CBCL-DP did not differ on gender, ethnicity, or parental education.

Child temperament

The two groups of children were compared on parents' reports of three temperament factors (negative affectivity, extraversion/surgency, and effortful control) and five laboratory-observed variables (exuberance, dysphoria, fear/inhibition, sociability/assertiveness, disinhibition/noncompliance) (Table 1). Children with the profile had significantly higher levels of mother-reported negative affect and extraversion/surgency, and lower levels of both mother- and father-rated effortful control. In addition, the profile group exhibited greater disinhibition/noncompliance in the laboratory.

Child psychopathology and functioning

Children with and without the CBCL-DP were compared on depressive, anxiety, ADHD, and ODD symptoms, functional impairment, socialization, and receptive and expressive vocabulary skills (Table 2). The groups differed on all variables except receptive vocabulary. Children with the profile exhibited significantly more depressive, anxiety, ADHD, and ODD symptoms, greater impairment, and poorer socialization and expressive vocabulary skills.

Parental psychopathology

The two groups were compared on maternal and paternal lifetime bipolar, depressive, anxiety, and substance use disorder diagnoses, and mother- and father self-reports of current depressive symptoms (Table 3). Mothers of children with the profile reported significantly higher rates of lifetime depressive and anxiety disorders, and more depressive symptomatology. There were no differences on paternal psychopathology.

Parental personality

Associations between children's CBCL-DP and parents' personalities were examined using parents' self-reports of positive emotionality, negative emotionality (NE), and constraint and parents' reports of their co-parents' wellbeing, stress reaction, and harm avoidance (Table 4). Mothers of children with the profile reported significantly greater NE, which was confirmed by informants' reports on stress reaction, a strong marker of the NE factor. In addition, mothers of profile positive children reported that their partners also had higher levels of stress reaction.

Parenting

The profile groups were compared on laboratory observations of maternal supportive presence, positive affect, and hostility, and quality of mother-child relationship and mother- and father-reported authoritative, authoritarian, and permissive parenting styles (Table 5). In the laboratory, mothers of children with the profile exhibited significantly greater hostility, less support, and a poorer relationship with their child. In addition, both parents of children with the profile reported having significantly more permissive parenting styles, and mothers reported a more authoritarian parenting style.

Life stressors and marital adjustment

Next, we examined associations of the CBCL-DP with life stressors and marital adjustment (Table 5). Fathers of children with the profile reported significantly lower marital satisfaction, but the groups did not differ on life stressors.

Cross-domain analyses

Variables that significantly distinguished the CBCL-DP positive and negative groups (Tables 1–5) were entered into logistic regression analyses to determine unique predictors of group status across domains. Separate models were examined for independent variables based on mothers' reports and those based on fathers' reports and laboratory observations.

Using mothers' reports, seven variables made significant unique contributions: child negative affectivity [Odds ratio (OR) = 1.36, 95% Confidence interval (CI)] = 1.09–1.70, p = .007), lower effortful control (OR = 0.79, CI = 0.69–0.90, $p < 001$), child depressive (OR = 1.03, CI = 1.00–1.06, p = .024) and ODD (OR = 1.09, CI = 1.01–1.18, p = .025) symptoms, functional impairment (OR = 1.44, CI = 1.08–1.92, p = .013), authoritarian parenting (OR = 1.13, CI = 1.01–1.26, p = .031) and less permissive parenting (OR = 0.84, CI = 0.72–0.98, p = .029). The effect of maternal permissive parenting was opposite in direction to its effect in the bivariate analysis above. Follow-up analyses indicated that inclusion of authoritarian parenting, ODD symptoms, and child negative affecity and effortful control collectively served as suppressor variables that reversed the direction of the association. Using father's reports and observational measures, father-reported low effortful control (OR = 0.88, CI = 0.79–0.98, p = .016) and permissive parenting (OR = 1.12, CI = 1.00–1.27, p = .054) uniquely predicted profile group membership.

Discussion

We examined correlates of the CBCL-DP in a community sample of preschool-aged children using a wide range of variables assessed with multiple methods. Consistent with our hypotheses, multivariate analyses revealed that preschoolers with the CBCL-DP were distinguished by depressive and ODD symptoms, impaired functioning, high temperamental negative affectivity and low effortful control, maternal authoritarian parenting, and paternal permissive parenting.

These findings are consistent with studies of community (Althoff et al., 2010; Holtmann et al., 2011; Volk & Todd, 2007) and clinical (Diler et al., 2009; McGough et al., 2008; Youngstrom et al., 2005) samples of older youth reporting that the CBCL-DP is associated with high levels of internalizing symptoms, externalizing symptoms, and functional impairment. Thus, even as early as the pre-school period, the CBCL-DP identifies children with a range of emotional and behavioral problems and impaired functioning.

There are few data on the temperamental correlates of the CBCL-DP. Our findings of associations with increased negative affectivity and reduced effortful control are consistent

with literature in both youth and adults documenting links between negative affectivity and both internalizing and externalizing psychopathology, and relations between low effortful control and externalizing disorders (Clark, 2005; Rettew, 2008). Although the distinction between temperament and psychopathology is controversial (Lahey, 2004), our results are consistent with the possibility that temperament traits of children with the profile may contribute to their broad range of psychiatric symptoms.

Our study also extends the literature by examining familial and environmental correlates of the CBCL-DP. Several parenting variables had significant unique effects in the multivariate analyses. Mothers of CBCL-DP children reported greater authoritarian (controlling, punitive) parenting, while fathers reported being more permissive (lack of structure and control). Although observational measures did not contribute unique variance in the multivariate models, bivariate analyses revealed similar associations for mothers' parenting in the laboratory. None of the parental psychopathology and personality variables contributed unique variance in the multivariate models, however, bivariate analyses revealed that mothers of children with the profile had greater lifetime anxiety and depressive disorders, current depressive symptoms, and NE than mothers of non-profile children. Moreover, both mothers and fathers of profile positive children were perceived by their partners to be higher in stress reaction, a key marker of NE. Finally, in the bivariate analyses, fathers of children with the CBCL-DP reported lower marital satisfaction, but the two profile groups did not differ on life stressors.

Our results are similar to the only study examining psychosocial correlates of the CBCL-DP in older youth. Jucksch et al. (2011) reported that the profile was associated with greater familial psychopathology and poorer parenting and family functioning, but not acute life events.

Our findings regarding child temperament, parental psychopathology and personality, and parenting are consistent with a variety of causal pathways. Parental depression and NE are both associated with maladaptive parenting, which, in turn, is associated with child psychopathology (Degnan, Almas, & Fox, 2010). Alternatively, there is evidence that children's behavioral problems and temperament traits evoke negative parenting from caregivers (Degnan et al., 2010). Indeed, there are reciprocal effects between parent and child temperament and parenting that may influence the development of psychopathology over time (Lengua & Kovacs, 2005). Finally, the relations between parents' and children's dysregulation and maladaptive parenting may reflect third variables, such as shared genetic influences (Rettew, 2008). Prospective studies are needed to delineate the mechanisms involved in the complex associations between parental psychopathology and personality, child temperament, parenting behavior, and the CBCL-DP.

In summary, our findings are consistent with studies of older youth indicating that the CBCL-DP is associated with a wide range of symptoms and impairment, and extends this literature by showing that these associations are evident as early as the preschool period. As older youth with the profile subsequently exhibit severe psychopathology and impairment as young adults (Althoff et al., 2010; Holtmann et al., 2011), these results suggest that the CBCL-DP may also identify young children who are at risk for a variety of poor outcomes. However, follow-up is necessary to demonstrate this.

Our findings are also consistent with the broader developmental literature on dysregulation in young children (for a review, see Eisenberg et al., 2010). This literature indicates that stable individual differences in self-regulation are evident by the preschool period, and that dysregulation is associated with externalizing and internalizing symptoms, negative affectivity, and maladaptive (especially authoritarian) parenting. Moreover, early

dysregulation predicts a range of psychiatric, general medical, and social problems in adolescence and young adulthood (Francis & Susman, 2009; Moffitt et al., 2011), underscoring its public health significance.

This study had a number of limitations. First, we employed the early childhood version of the CBCL, which has not been previously used for the Dysfunction Profile. Second, the profile has been defined using a variety of cutoffs and approaches to combining scales. Following research on non-clinical samples of older youth, we used a low threshold. Consistent with these studies (e.g., Meyer et al., 2009), we still found numerous differences between children with and without the profile.

Third, we used mothers' reports for both the profile and many of the dependent variables, raising the possibility of inflated associations due to common methods. Importantly, however, fathers' reports and laboratory observations confirmed many of the findings.

Fourth, many of the psychopathology and temperament variables associated with the CBCL-DP overlap in content with the three scales that comprise the profile. However, our finding of meaningful associations with variables in other domains, such as parenting and parental psychopathology and personality, extends and provides more robust support for the construct validity of the CBCL-DP. Finally, as our findings are based on cross-sectional analyses, we cannot draw inferences about causality.

Despite these limitations, this is the first study to demonstrate that children as young as preschool-age with the CBCL-DP exhibit a pattern of psychopathology that is similar to older children and adolescents with the profile. Furthermore, this study extends the literature by examining temperamental, familial, and environmental correlates of the profile. Our findings indicate that even in a non-clinical sample of preschool children, the CBCL-DP is associated with a broad constellation of behavioral and emotional problems, functional impairment, and temperament traits reflecting emotional and behavioral dysregulation. Furthermore, the parents of these children tend to exhibit some similar characteristics, as well as maladaptive parenting. Our findings highlight the importance of following and closely monitoring these children, as they may be at risk for more severe psychopathology and impairment.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Key points

- The CBCL-DP is associated with multiple forms of psychopathology and impaired functioning in older children and adolescents.

- We found that preschool-aged children with the CBCL-DP exhibit similar characteristics.

- In addition, preschoolers with the profile exhibited greater temperamental negative emotionality and lower effortful control than their peers. Parents of CBCL-DP preschoolers exhibited more authoritarian and permissive parenting styles.

- The pattern of dysregulation associated with the CBCL-DP is evident as early as preschool, and children with the profile should be closely monitored.

Table 1

Comparisons between CBCL-DP groups on child temperament

	t-test	CBCL-DP positive		CBCL-DP negative	
		Mean	SD	Mean	SD
CBQ negative affect – M	4.48 ***	1.23	2.17	−0.17	2.63
CBQ extraversion – M	4 74 ***	1.62	2.65	−0.17	2.69
CBQ effortful control – M	−8.19 ***	−3.85	3.73	0.45	3.74
CBQ negative affect – F	2.12	0.79	2.50	−0.12	2.67
CBQ extraversion – F	1.98	0.77	2.41	−0.12	2.80
CBQ effortful control – F	−3.89 ***	−2.07	3.82	0.24	3.65
Lab-TAB sociability/assertiveness	−1.28	−0.13	0.79	−0.02	1.03
Lab-TAB dysphoria	0.21	−0.02	1.20	0.00	0.97
Lab-TAB fear/inhibition	1.55	0.18	1.10	−0.04	0.97
Lab-TAB exuberance	−2.14	−0.27	1.02	0.03	1.00
Lab-TAB disinhibition/noncompliance	2.69 **	0.40	1.21	−0.05	0.97

M, mother-report; F, father-report; CBQ, Children's Behavior Questionnaire ($n = 516$ and 395 for mother- and father-reports, respectively); Lab-TAB, Laboratory Temperament Assessment Battery ($n = 530$); SD, standard deviation.

**
  $p < .01,$

***
  $p < .001.$

Table 2

Comparisons between CBCL-DP groups on child psychopathology and functioning

	t-test	CBCL-DP positive		CBCL-DP negative	
		Mean	SD	Mean	SD
PAPA anxiety	4.31 ***	16.68	31.66	−2.05	18.18
PAPA depression	4.10 ***	14.02	28.10	−1.58	8.34
PAPA ODD	9.01 ***	15.10	6.72	6.67	5.05
PAPA ADHD	4.99 ***	10.32	10.56	3.11	5.07
PAPA impairment	6.67 ***	2.81	2.30	0.67	1.25
Vineland	−5.21 ***	16.49	3.82	19.15	3.58
PPVT	−1.76	99.85	13.22	103.22	14.10
EOWPVT	−3.29 **	95.35	15.05	101.16	12.59

PAPA, Preschool-Age Psychiatric Assessment (*n* = 526); Impairment, summed impairment ratings (*n* = 519); Vineland, Vineland Adaptive Behavior Screener Socialization subscale (*n* = 526); PPVT, Peabody Picture Vocabulary Test (*n* = 543); EOWPVT, Expressive One Word Picture Vocabulary Test (*n* = 542); *SD*, standard deviation.

**
p < .01

***
p < .001.

Table 3

Comparisons between CBCL-DP groups on parental psychopathology

	Chi-square	CBCL-DP positive n (%)	CBCL-DP negative n (%)
SCID bipolar disorder – M	0.24	0/58 (0)	2/477 (0.4)
SCID depressive disorder – M	6.19*	27/58 (46.6)	145/477 (30.4)
SCID substance use – M	1.07	16/58 (27.6)	103/477 (21.6)
SCID anxiety disorder – M	14.05***	33/58 (56.9)	153/477 (32.1)
SCID bipolar disorder – F	0.47	0/55 (0)	4/470 (0.9)
SCID depressive disorder – F	2.08	13/55 (23.6)	75/470 (16)
SCID substance use – F	0.44	23/55 (41.8)	175/470 (37.2)
SCID anxiety disorder - F	1.23	14/55 (25.5)	90/470 (19.1)

	t-test	CBCL-DP positive		CBCL-DP negative	
		Mean	SD	Mean	SD
DID – M	3.83**	8.16	6.83	5.14	5.05
DID – F	2.25	6.30	5.39	4.27	5.61

M, mother-report; F, father-report; SCID, Structured Clinical Interview for *DSM–IV* (n = 535 and 525 for mothers and fathers, respectively); DID, Diagnostic Inventory for Depression (n = 473 and 395 for mother- and father-reports, respectively); *SD*, standard deviation.

*
$p < .05$,

**
$p < .01$,

***
$p < .001$.

Table 4

Comparisons between CBCL-DP groups on parental personality

	t-test	CBCL-DP positive		CBCL-DP negative	
		Mean	SD	Mean	SD
MPQ positive emotionality – M	−1.55	29.41	7.53	31.18	7.66
MPQ negative emotionality – M	4.92 ***	10.97	5.57	7.31	4.91
MPQ constraint – M	−0.87	26.48	4.94	27.04	4.19
MPQ-I perceived wellbeing – M	−0.37	9.27	4.46	9.49	3.97
MPQ-I perceived stress reaction – M	2.43 *	5.99	4.37	4.55	3.87
MPQ-I perceived harm avoidance – M	−0.41	7.43	3.23	7.63	3.26
MPQ positive emotionality – F	0.01	30.46	10.38	30.44	8.72
MPQ negative emotionality – F	1.92	9.16	7.14	7.25	6.05
MPQ constraint – F	−0.07	23.84	4.81	23.90	5.54
MPQ-I perceived wellbeing – F	−1.64	8.90	4.14	9.88	3.64
MPQ-I perceived stress reaction – F	2.96 **	7.72	4.31	5.77	4.05
MPQ-I perceived harm avoidance – F	−0.36	9.53	2.12	9.66	2.24

M, mother-report; F, father-report; MPQ, Multidimensional Personality Questionnaire ($n = 476$ and 397 for mother- and father-reports, respectively); MPQ-I, informant MPQ ($n = 471$ and 395 for mother- and father-reported informant ratings, respectively); SD, standard deviation.

*
$p < .05$,

**
$p < .01$,

***
$p < .001$.

Table 5

Comparisons between CBCL-DP groups on parenting, marital adjustment, and stress

	t-test	CBCL-DP positive		CBCL-DP negative	
		Mean	SD	Mean	SD
PSDQ authoritative – M	−1.34	60.01	7.21	61.27	6.53
PSDQ authoritarian – M	5.78***	23.02	4.54	19.58	4.11
PSDQ permissive – M	3.90***	12.39	3.33	10.62	3.15
Observed maternal support	−2.71**	4.16	0.87	4.50	0.56
Observed maternal hostility	2.36*	1.37	0.57	1.18	0.31
Observed maternal positive affect	−1.92	1.94	0.33	2.03	0.30
Observed quality of relationship	−2.93**	3.65	0.87	4.01	0.57
PSDQ authoritative – F	−0.79	55.62	8.74	56.68	8.25
PSDQ authoritarian – F	1.83	21.66	4.25	20.27	4.77
PSDQ permissive – F	3.09**	12.86	3.76	11.02	3.05
DAS – M	1.54	107.89	19.65	112.86	18.78
PAPA current stressors	1.37	0.87	1.12	0.68	0.99
PAPA lifetime stressors	2.20	4.96	3.50	3.89	2.65
DAS – F	−2.03*	107.03	16.47	112.95	16.55

M, mother-report; F, father-report; PSDQ, Parenting Styles and Dimensions Questionnaire ($n = 501$ and 395 for mother- and father-reports, respectively); $n = 485$ for laboratory observations; DAS, Dyadic Adjustment Scale ($n = 374$ and 328 for mother- and father-reports, respectively); PAPA, Preschool-Age Psychiatric Assessment ($n = 525$), SD, standard deviation.

*
$p < .05$,

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$p < .01$,

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$p < .001$.