Interpretations of others’ behavior, even when inaccurate, have implications for social interactions and subsequent behavior (Dusek, 1971; Rosenhan, 1973; Rosenthal, 2002; Rutchick, Smyth, Lopoo, & Dusek, 2009). Parents’ interpretation of their child’s behavior may be especially important because of the centrality of parent–child relationships for children’s development (Ainsworth, 1979, 1989; Shaver & Mikulincer, 2010; Simpson & Rholes, 2010). In families in which a child suffers from a psychiatric disorder, parents’ interpretations of symptomatic behavior may influence the degree of stress and conflict they experience, and positive interpretations may alleviate some of the negative consequences of diagnoses for families.

Perceptions of ADHD Behavior
To investigate associations between parental interpretations of children’s symptomatic behavior and the quality of parent–child relationships, we chose to focus on interpretations associated with ADHD for four reasons. First, it is the most prevalent behavioral disorder diagnosed during childhood. Specifically, the prevalence of ADHD in the general population is approximately 3% to 8%, and the disorder is characterized by severe patterns of inattention, impulsivity, and hyperactivity that impair functioning (American Psychiatric Association, 2000; Centers for Disease Control and Prevention, 2005). Symptoms of ADHD affect child functioning in diverse domains, predicting teacher and peer rejection, poor academic performance, and problems with everyday tasks and demands (Mikami, Boucher, & Humphreys, 2005). Parents are familiar with the symptoms of ADHD as well as the stigma associated with a diagnosis (dosReis, Barksdale, Sherman, Maloney, & Charach, 2010). Despite the negative consequences of ADHD diagnoses and the availability of effective treatments, family adherence to treatment regimens is notoriously low (Charach, Ickowicz, & Schachar, 2004; Pescosolido et al., 2008; Sanchez, Crismon, Barner, Bettinger, & Wilson, 2005). A better understanding of parents’ perceptions of and attributions for child symptomatic behavior might improve adherence rates and, ultimately, child outcomes.

Heather C. Lench1, Linda J. Levine2, and Carol K. Whalen2

Abstract
Objective: Attention Deficit/Hyperactivity Disorder (ADHD) is a commonly diagnosed childhood disorder associated with parent–child conflict and parental stress. This investigation explored whether parents’ interpretation of symptomatic behavior predicted negative interactions with and perceptions of their child. Method: We recruited parents of 7-12 year old children who were diagnosed with ADHD (n = 41), were diagnosed with ADHD but whose parents construed symptomatic behavior positively (Indigo children; n = 36), and had no diagnosis (n = 26). Parents completed a questionnaire about their experiences with their child. Results: Relative to parents who used only the ADHD label for children’s behavior, parents who also perceived symptomatic behavior as a sign of positive characteristics reported less frequent negative experiences with their child and less intense negative emotions during those experiences. They also viewed their children as more self-efficacious and as more likely to have a positive future. Conclusion: Positive perceptions of child symptomatic behavior appeared to buffer the impact of ADHD symptoms on parents and parent-child relationships. (J. of Att. Dis. 2013; 17(2) 141-151)

Keywords
ADHD, parent perception, parent–child relationships

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Second, symptoms associated with ADHD are related to conflict in parent–child relationships. Numerous observations of parent–child interactions have revealed that children with ADHD are less compliant, parents are more controlling, and interactions are more negative compared with control families (Cunningham & Barkley, 1979; Fletcher, Fischer, Barkley, & Smallish, 1996; Tallmadge & Barkley, 1983). Furthermore, parents of children with ADHD report greater stress, more depression, more negative emotions during parent–child interactions, and less marital satisfaction than do control parents (Barkley, Anastopoulos, Guevremont, & Fletcher, 1992; Breen & Barkley, 1998; Gerdes, Hoza, & Pelham, 2003; Mash & Johnston, 1983; Murphy & Barkley, 1996; Pressman et al., 2006; Whalen et al., 2006, 2009). This evidence suggests that symptoms associated with ADHD create conflict in parent–child interactions and that parents of children with ADHD experience relatively intense negative emotions (Johnston & Mash, 2001).

Third, there is evidence that parents’ perceptions of their child’s behavior are partially independent of actual behavior in that parents see an improvement in behavior when the child receives placebo medications for ADHD even though the placebo effect no change in child behavior (for a review, see Waschbusch, Pelham, Waxmonsky, & Johnston, 2009). This suggests that parents’ perceptions are not perfectly correlated with actual symptomatic behaviors in their children, and how parents appraise behavior may influence the degree to which parents experience stress as a result of the child’s symptoms (Whalen, Odgers, Reed, & Henker, 2011).

Fourth, parents differ in how they interpret their child’s ADHD symptomatic behavior. Many parents use the label ADHD, a diagnostic term that captures clusters of problematic behaviors in multiple realms, including inattention, impulsivity, and hyperactivity. Other parents, while acknowledging the label ADHD, interpret the child’s symptomatic behavior as indicative of positive characteristics. One such group of parents interprets child behavior that is symptomatic of ADHD as a sign that their child is evolved to better deal with a complex environment than other children. Parents in this group, whose children are sometimes labeled as “Indigo children” (Carroll & Tober, 1999), believe that their children have indigo auras that indicate an unusual degree of social and emotional connection with the world and heightened sensitivity to others. Most parents in this group identify their children as having ADHD and have sought professional clinical services for their child, but they also believe that negative reactions to their child’s behavior result from other people’s inability to accept the child’s advanced ideas and knowledge. This group of parents has received some media attention and has been the topic of several books and websites, but they have not previously been included in research studies. The present investigation is intended to add to the long history in psychology of studying groups holding unusual beliefs (e.g., Festinger, Riecken, & Schachter, 1956; McNally & Clancy, 2005). Such studies can be useful in revealing processes that may be common to other groups, in this case other parents, although we recommend caution in generalizing from observed patterns for this unusual group of parents. In the present investigation, parents of Indigo children fulfilled the requirement that their children had been professionally diagnosed with ADHD but that parents also held positive interpretations of symptomatic behaviors as a sign of their child’s abilities.

The Present Investigation

We assessed the potential impact of positive interpretations by comparing parents’ perceptions of their child and their reports of stressful interactions with their child in three groups of parents: parents who use the ADHD label, parents who regard ADHD symptomatic behavior as a sign of positive special characteristics, and parents of children without any psychiatric diagnosis. The present study focused on several outcomes related to parent–child relationship quality. Reports of stressful negative events and emotional reactions to those events were examined because prior studies have shown that parents of children with ADHD symptoms report more negative events, conflict, stress, depression, and anger than do control parents, and that the number of negative events and negative emotions is indicative of parent–child conflict (Barkley et al., 1992; Breen & Barkley, 1998; Johnston & Reader, 2002; Mash & Johnston, 1983; Murphy & Barkley, 1996; Reader, Stewart, & Johnson, 2009). Parental perceptions of child efficacy and optimism about the child’s future were included because past studies have shown that parents’ perceptions of their child on these dimensions are related to the quality of the parent–child relationship (e.g., Lench, Quas, & Edelstein, 2006; Peterson & Bossio, 2001; Rutitch et al., 2009).

Relative to parents who use the ADHD label, parents who positively interpret symptomatic behavior were expected to report fewer negative experiences with their child, less intense negative emotion during challenging interaction, higher expectations for child self-efficacy, and greater optimism about their child’s future. Note that all of these outcomes focus on parents’ perception of their child, and not observable differences. Parental perceptions were the focus of this investigation because of their importance in determining treatment outcomes and child functioning (Johnston & Mash, 2001; Waschbusch et al., 2009).

Method

Participants

Parents with children who were between 7 and 12 years old were invited to participate in an online survey via e-mail solicitations (e-mail addresses were available from Listservs or were posted by parents on public websites) and
solicitations on websites that serve the target groups (e.g., websites related to ADHD, websites about Indigo children, Facebook parenting groups). The sample was restricted to parents within the United States to limit variation in cultural beliefs and media exposure. Parents were categorized into three groups: parents of children identified as having ADHD who use that label (ADHD-only group; n = 41), parents of children identified as having ADHD who view their child’s ADHD as indicating special abilities (ADHD-Indigo group; n = 36), and parents of children not identified as having any disorder (control group; n = 26).

This categorization was conducted in two steps. First, the child described by the parent was categorized with respect to whether the child was identified as having ADHD. Parents reported whether their child had ever been professionally diagnosed with any of several prevalent childhood disorders, one of which was ADHD (information on comorbid disorders is reported in Table 1). Responses to this item were used to categorize children as identified or not identified as having ADHD. Ideally, assessments of mental health disorders are based on individual and lengthy standardized interviews conducted by trained professionals, but interviews were not possible in this case, because participants responded via the Internet, which facilitated recruitment of the Indigo group. We therefore took steps to address the validity of the ADHD identification. To assess the impact of diagnostic validity, all reported analyses were conducted using only parents who reported that their child was receiving treatment from a psychologist (eliminating children who may have been diagnosed by a general practitioner or educator without specialized psychiatric training); inferences from analyses remain identical if only these parents (with children most likely to have been diagnosed by a trained clinician) were included. Another way to assess the validity of the ADHD identification was to examine ADHD symptoms reported by the parents. Parents of children identified with ADHD (included ADHD-only and ADHD-Indigo groups) reported more frequent ADHD symptoms in their children ($M_{\text{inattentive}} = 2.89$, $SD = 0.75$; $M_{\text{hyperactive}} = 2.70$, $SD = 0.72$) than did parents of children not identified with ADHD ($M_{\text{inattentive}} = 2.03$, $SD = 0.64$; $M_{\text{hyperactive}} = 1.85$, $SD = 0.43$), $t(100) = 5.20, p < .001, d = 1.04$ and $t(100) = 5.64, p < .001, d = 1.13$, respectively. When examining the number of symptoms reported, parents of children identified with ADHD also reported more symptoms ($M_{\text{inattentive}} = 5.66$, $SD = 3.03$; $M_{\text{hyperactive}} = 5.05$, $SD = 2.86$) than did parents of children not identified with ADHD ($M_{\text{inattentive}} = 2.23$, $SD = 2.57$; $M_{\text{hyperactive}} = 1.65$, $SD = 1.67$), $t(100) = 5.16, p < .001, d = 1.03$ and $t(100) = 5.72, p < .001, d = 1.14$, respectively. Although these analyses support the validity of the parents’ reports of ADHD status, it is important to note that the study design did not allow independent verification of the diagnoses using, for example, reports from teachers or clinicians.

The second step in categorizing children into the three groups was to identify whether parents of children diagnosed with ADHD were reporting on a child whom they considered an “Indigo child.” This classification was based on the websites or solicitations to which parents responded (i.e., websites targeted to parents of Indigo children). To check this strategy, parent reports of Indigo characteristics were examined. As shown in Table 2, those in the ADHD-Indigo group reported more intense Indigo “symptoms” in their child than did those in the ADHD-only group, $t(74) = 3.70, p < .001, d = .86$. Parents were also asked to report their child’s “special abilities” with no specific prompt for Indigo status; 72% of parents in the ADHD-Indigo group listed abilities considered Indigo (see the Indigo measure described later in the article for these abilities), 7% of parents in the ADHD-only group listed such abilities, and 4% in the control group listed such abilities.

Sample characteristics are reported in Table 1. No significant group differences were found in parent demographic characteristics or in child age, ethnicity, academic grades, or public school enrollment (children in the control group were marginally more likely to be in public school than were children in the two ADHD groups; $p = .08$). There was a gender difference among groups, such that the ADHD-only and ADHD-Indigo groups contained a greater percentage of boys than the control group, $\chi^2(2) = 6.23, p < .04$, as is typical of samples of children with ADHD characteristics. Rates of reported comorbid diagnoses of anxiety and depression were equivalent across groups. Children in the ADHD-only group had more reported learning disorder diagnoses than did children in other groups, $\chi^2(1) = 10.10, p < .006$. A marginal difference was found in rates of reported comorbid conduct disorder diagnoses, $\chi^2(2) = 5.41, p = .07$, indicating that children in the ADHD-only group had more conduct disorder diagnoses than children in the control group, $\chi^2(1) = 4.96, p < .03$, but did not differ from the ADHD-Indigo group, $\chi^2(1) = 1.30, p = .22$. Children in the control group were less likely to be in treatment of any kind than children in the ADHD-only or ADHD-Indigo groups, $\chi^2(2) = 20.11, p < .001$. Children in the ADHD-only group were more likely to be in therapy than children in the ADHD-Indigo or control groups, $\chi^2(2) = 24.00, p < .001$. In addition to the expected medication differences between ADHD-only and ADHD-Indigo groups and the control group, parents in the ADHD-only group were more likely to report that their child currently took ADHD medications than were parents in the ADHD-Indigo group, $\chi^2(1) = 34.50, p < .001$.

**Measures and Procedure**

Parents gave consent, were told that the Internet survey concerned the diversity of family life, and were instructed to complete the survey in one sitting in a quiet area. Potential
common method variance is addressed in the Note section. All parents were debriefed at the end of the survey. The survey took approximately 30 min, and parents were offered a chance to win a US$50 gift certificate. All procedures were approved by the university’s Institutional Review Board. If they had more than one child between the ages of 7 and 12, parents were instructed to complete the survey for only one child. Participants reported demographic characteristics of their child and themselves, including age, ethnicity, gender, school enrollment, grades, mental health diagnoses, and current medication or other treatment.

**ADHD symptoms.** Parents rated their child’s ADHD symptoms; such ratings have been found to be positively correlated with other observations, including teacher ratings (Biederman et al., 2007; Sonuga-Barke, Coghill, DeBacker, & Swanson, 2009). Parents reported their child’s behavior on items that represented the diagnostic criteria for ADHD listed in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000). This measure consisted of nine items that represented inattentive symptoms (α = .93; for example, “easily distracted by things going on around him/her”) and nine items that represented hyperactive/impulsive symptoms of ADHD (α = .90; for example, “finds it hard to slow down”). These diagnostic items are those typically included in teacher-, parent-, and self-report instruments as well as in structured interview protocols (e.g., Kaufman et al., 1997; Swanson et al., 2001). Parents rated the extent to which each statement was true of their child on a scale ranging from 1 (*not at all*) to 4 (*very much*). Symptoms were scored in two ways, dimensionally and categorically, because each approach offers advantages for assessing psychopathology (Helzer, Kraemer, & Krueger, 2006; Pickles & Angold, 2003). For the dimensional score, a mean composite was created on the reported symptom severity. For the categorical score, a symptom was considered either present (score of 3 or 4) or absent (score of 1 or 2), and the number of present symptoms was summed.

**“Indigo” characteristics.** A total of 20 Items were drawn from informal measures listed in web and print resources that were designed to assess characteristics of “Indigo” children (Carroll & Tober, 1999; metagifted.org, 2005, http://www.metagifted.org, theindigoevolution.com, 2005, http://theindigoevolution.com). Parents rated the degree to which each statement was true of their child on a scale ranging from 1 (*not at all*) to 4 (*very much*; α = .88). Items included

### Table 1. Parent and Child Demographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>ADHD only (n = 41)</th>
<th>ADHD Indigo (n = 36)</th>
<th>Control (n = 26)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parent characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, M (SD)</td>
<td>39.70 (7.74)</td>
<td>40.38 (6.39)</td>
<td>36.00 (7.05)</td>
</tr>
<tr>
<td>% mothers</td>
<td>90.0</td>
<td>91.7</td>
<td>96.2</td>
</tr>
<tr>
<td>Number of children, M (SD)</td>
<td>2.17 (1.14)</td>
<td>2.00 (1.22)</td>
<td>2.38 (0.75)</td>
</tr>
<tr>
<td>% with college degree</td>
<td>68.3</td>
<td>63.9</td>
<td>69.2</td>
</tr>
<tr>
<td>% earning below 30K</td>
<td>20.0</td>
<td>22.9</td>
<td>23.1</td>
</tr>
<tr>
<td>% earning above 100K</td>
<td>30.0</td>
<td>25.7</td>
<td>23.1</td>
</tr>
<tr>
<td>% Caucasian</td>
<td>85.4</td>
<td>82.9</td>
<td>76.9</td>
</tr>
<tr>
<td>% married</td>
<td>53.7</td>
<td>63.9</td>
<td>73.1</td>
</tr>
<tr>
<td>% diagnosed with mental disorder</td>
<td>26.8</td>
<td>13.9</td>
<td>19.2</td>
</tr>
<tr>
<td><strong>Child characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, M (SD)</td>
<td>9.63 (1.39)</td>
<td>9.53 (1.78)</td>
<td>8.96 (1.56)</td>
</tr>
<tr>
<td>% male</td>
<td>77.5</td>
<td>74.3</td>
<td>50.0</td>
</tr>
<tr>
<td>% enrolled in public school</td>
<td>63.4</td>
<td>58.3</td>
<td>84.6</td>
</tr>
<tr>
<td>Average grades (2 = mostly As and Bs), M (SD)</td>
<td>3.15 (1.91)</td>
<td>2.83 (1.95)</td>
<td>2.92 (2.34)</td>
</tr>
<tr>
<td>% Caucasian</td>
<td>75.6</td>
<td>86.1</td>
<td>69.2</td>
</tr>
<tr>
<td>% with learning disorder</td>
<td>39.0</td>
<td>16.7</td>
<td>7.7</td>
</tr>
<tr>
<td>% with anxiety disorder</td>
<td>19.5</td>
<td>2.8</td>
<td>15.4</td>
</tr>
<tr>
<td>% with depressive disorder</td>
<td>14.6</td>
<td>8.3</td>
<td>3.8</td>
</tr>
<tr>
<td>% with oppositional or conduct disorder</td>
<td>17.1</td>
<td>8.3</td>
<td>0.0</td>
</tr>
<tr>
<td>% on medication for ADHD</td>
<td>78.0</td>
<td>11.1</td>
<td>3.8</td>
</tr>
<tr>
<td>% in nonpharmacological therapy</td>
<td>56.1</td>
<td>11.1</td>
<td>11.5</td>
</tr>
<tr>
<td>% treated homeopathically (e.g., diet)</td>
<td>0.0</td>
<td>5.6</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*The child in the control group receiving medication used to treat ADHD was only reported by the parent to have insomnia, an off-label use of some ADHD medications.
are as follows: is particularly creative, is intuitive, is a nonconformist, feels restless, interrupts other people, has strong empathy for others, sees better ways of doing things at home or school, has spiritual intelligence, has a hard time waiting in line, is very intelligent, gets bored easily with assigned tasks, answers questions before they are done being asked, refuses to respond to guilt trips, came into the world feeling like royalty, is frustrated by systems that require little creativity, has difficulty with discipline and authority, refuses to do things he or she is told to do, is a daydreamer, feels that she or he deserves to be here, and has an obvious sense of self. Two of these items were identical to ADHD symptoms (i.e., interrupts others, difficulty waiting in line), and in these cases, only the item from the ADHD scale was included in the survey.

**Negative events and emotions.** Parents rated how often they experienced challenging events related to their child listed in the Disruptive Behavior Stress Inventory (DBSI; Johnson & Reader, 2002; Reader et al., 2009). The DBSI is a measure of the frequency of daily hassles related to ADHD-type behaviors that impair family functioning (e.g., not being able to leave a child with a babysitter). The DBSI was developed from reports of parents about family problems with children diagnosed with ADHD and has been validated for use with parents of diagnosed children (Reader et al., 2009). Two changes were made to the scale to assess recent family functioning and reactions relevant to parent–child interactions. First, parents reported the frequency of events within the last 6 months. This change was made because parents of children identified with ADHD were expected to report more of these events than parents of children with no ADHD identification, regardless of parental perceptions of behavior. The change increased the likelihood that the measure would be sufficiently sensitive to capture differences in severity among the ADHD and Indigo groups. Second, parents reported the intensity of their disappointment and frustration during the event rather than general stress. This change was made to capture negative emotional responses that were particularly likely to relate to parent–child relationships. Instructions stated that “the next items relate to potential stressors that are sometimes experienced as a result of having an active child.” Parents rated how often they experienced the event in the past month and their emotional reactions to the situation (disappointment, frustration) on scales ranging from 1 (not at all) to 4 (very much; α = .89 for frequency, α = .93 for discouragement, α = .91 for frustration).

**Perceptions of the child.** Parents rated their child’s ability to problem solve on the General Self-Efficacy Scale (GSES), a measure that has been validated for use in a variety of populations and situations (Schwarzer & Jerusalem, 1995). The GSES consists of 10 items (e.g., “My child can always manage to solve difficult problems if s/he tries hard enough”) rated on a scale ranging from 1 (not at all) to 4 (very much; α = .92). Parents also completed a measure of optimism on which they rated the likelihood that their child would experience 15 positive life events (α = .87; e.g., making the honor roll, maintaining a healthy weight) and 15 negative life events (α = .90; e.g., dropping out of school, being overweight) compared with an average child, on a scale ranging from 1 (far below average) to 7 (far above average; Lench et al., 2006; Lench & Levine, 2005; Weinstein, 1980).

### Results

**Perceived Symptoms**

Between-subject ANOVAs were conducted to examine differences in symptoms between the three groups of children (ADHD-only, ADHD-Indigo, control). The groups differed in the mean reported severity of inattentive ADHD symptoms,

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**Table 2. Ms and SDs for Each Parental Group**

<table>
<thead>
<tr>
<th></th>
<th>ADHD only</th>
<th>ADHD Indigo</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived symptoms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD symptoms–Inattentive</td>
<td>3.05 (0.74)</td>
<td>2.71 (0.73)</td>
<td>2.03 (0.64)</td>
</tr>
<tr>
<td>ADHD symptoms–Hyperactive</td>
<td>2.80 (0.67)</td>
<td>2.63 (0.78)</td>
<td>1.85 (0.43)</td>
</tr>
<tr>
<td>Indigo characteristics</td>
<td>2.76 (0.35)</td>
<td>3.18 (0.54)</td>
<td>2.47 (0.35)</td>
</tr>
<tr>
<td><strong>Negative events and emotions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of negative events</td>
<td>2.44 (0.70)</td>
<td>1.96 (0.66)</td>
<td>1.52 (0.35)</td>
</tr>
<tr>
<td>Discouragement during events</td>
<td>2.34 (0.80)</td>
<td>1.94 (0.79)</td>
<td>1.51 (0.55)</td>
</tr>
<tr>
<td>Frustration during events</td>
<td>2.56 (0.74)</td>
<td>2.09 (0.79)</td>
<td>1.74 (0.57)</td>
</tr>
<tr>
<td><strong>Perceptions of the child</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child self-efficacy</td>
<td>2.13 (0.60)</td>
<td>2.76 (0.54)</td>
<td>2.84 (0.66)</td>
</tr>
<tr>
<td>Likelihood of positive life events</td>
<td>4.57 (0.79)</td>
<td>5.18 (0.76)</td>
<td>5.18 (1.05)</td>
</tr>
<tr>
<td>Likelihood of negative life events</td>
<td>3.33 (0.94)</td>
<td>3.07 (0.94)</td>
<td>2.67 (1.04)</td>
</tr>
</tbody>
</table>

Note: Differing superscripts indicate that the groups differed at p < .05 with a Bonferroni correction.
Parents differed in the intensity of discouragement they experienced as a consequence of these negative events with their child, $F(2, 93) = 9.19, p < .001, \eta^2 = .17$. Parents of children in the ADHD-only group reported more discouragement than did parents of children in the ADHD-Indigo group, $t(71) = 2.16, p < .05, d = .51$, and the control group, $t(59) = 4.42, p < .001, d = 1.15$. Parents of children in the ADHD-Indigo group reported more discouragement than did parents of children in the control group, $t(56) = 2.29, p < .05, d = .61$. Parents also differed in the frustration they experienced as a consequence of negative events with their child, $F(2, 94) = 10.12, p < .001, \eta^2 = .18$. Parents of children in the ADHD-only group reported more frustration than did parents of children in the ADHD-Indigo group, $t(71) = 2.65, p < .02, d = .63$, and the control group, $t(60) = 4.65, p < .001, d = 1.20$. Parents of children in the ADHD-Indigo group reported marginally more frustration than did parents of children in the control group, $t(57) = 1.86, p = .07, d = .49$.

**Perceptions of Child Self-Efficacy and Optimism About Child’s Future**

Parents differed in their perception of child self-efficacy, $F(2, 89) = 13.76, p < .001, \eta^2 = .24$. Parents of children in the ADHD-only group perceived their child to be less self-efficacious than did parents of children in the ADHD-Indigo group, $t(68) = 4.58, p < .001, d = 1.11$, and the control group, $t(57) = 4.24, p < .001, d = 1.12$. The ADHD-Indigo and control groups did not significantly differ in parents’ perception of their child’s self-efficacy, $t(53) = .51, ns, d = .14$.

Parents rated the likelihood that their child would experience a number of positive and negative future life events. Consistent with previous findings that parents demonstrate optimism for their children, a paired-sample $t$ test revealed that, overall, parents judged their child as more likely to experience positive events than negative events, $t(95) = 10.69, p < .001, d = 2.19$. A between-subject ANOVA revealed that the groups differed in the perceived likelihood that the child would experience positive events in the future, $F(2, 93) = 5.97, p = .004, \eta^2 = .11$. Parents of children in the ADHD-only group judged positive events as less likely to occur in their child’s future than did parents of children in the ADHD-Indigo group, $t(70) = 3.36, p < .005, d = .80$, and the control group, $t(60) = 2.61, p < .05, d = .67$. Parents of children in the ADHD-Indigo and control group judged their children to be equally likely to experience positive events in the future, $t(56) = .02, ns, d = .01$. Parents also differed in their perceptions of the likelihood that their child would experience negative events in the future, $F(2, 93) = 3.41, p = .04, \eta^2 = .07$. Parents of children in the ADHD-only group judged that negative events were more likely to occur in their child’s future than did parents of children in the control group, $t(60) = 2.58$.

**Negative Events and Emotions**

Table 2 presents descriptive statistics for parent-reported characteristics of children in the ADHD-only, ADHD-Indigo, and control groups. The groups differed in the frequency of reported negative interactions with their child, $F(2, 94) = 16.97, p < .001, \eta^2 = .27$. Parents of children in the ADHD-only group reported more negative events in the past month than did parents of children in the ADHD-Indigo group, $t(71) = 3.00, p < .005, d = .71$, or the control group, $t(60) = 6.01, p < .001, d = 1.55$. Parents of children in the ADHD-Indigo group reported more negative events than did parents of children in the control group, $t(57) = 3.03, p < .005, d = .80$.

$F(2, 99) = 16.02, p < .001, \eta^2 = .24$, and hyperactive/impulsive ADHD symptoms, $F(2, 99) = 16.34, p < .001, \eta^2 = .25$. As reported in Table 2, post hoc contrasts revealed that parents of children in the ADHD-only group and the ADHD-Indigo group did not significantly differ in the severity of reported ADHD symptoms: inattentive, $t(74) = 1.96, ns, d = .46$, and hyperactive, $t(74) = .86, ns, d = .20$. The inferences that can be made from all analyses described in the following remain similar if reported ADHD symptoms were included as a covariate, suggesting that any nonsignificant differences in ADHD symptoms between the ADHD-only and ADHD-Indigo groups could not account for other differences between these groups. As expected, the ADHD-only group and the ADHD-Indigo group reported more severe inattentive symptoms than did the control group, $t(64) = 5.72, p < .001, d = 1.43$ and $t(60) = 3.81, p < .001, d = .98$, respectively, and more severe hyperactive symptoms than the control group, $t(64) = 6.20, p < .001, d = 1.55$ and $t(60) = 4.56, p < .001, d = 1.18$, respectively. Analyses were comparable when the number of symptoms was examined. Parents of children in the ADHD-only group ($M = 6.23, SD = 2.91$) and ADHD-Indigo group ($M = 4.97, SD = 3.06$) reported more inattentive symptoms than did parents of children in the control group ($M = 2.23, SD = 2.57$), $F(2, 99) = 15.65, p < .001, \eta^2 = .24$, and reported more hyperactive symptoms ($M_{\text{ADHD}} = 5.18, SD = 2.63; M_{\text{Indigo}} = 4.92, SD = 3.13$) than did parents in the control group ($M = 1.65, SD = 1.67$), $F(2, 99) = 16.33, p < .001, \eta^2 = .25$.

The groups also differed significantly in Indigo characteristics, $F(2, 99) = 18.46, p < .001, \eta^2 = .27$. Parents of children in the ADHD-Indigo group reported that their child displayed greater degrees of these positive characteristics than did parents of children in the ADHD-only group, $t(74) = 3.70, p < .001, d = .86$, and the control group, $t(60) = 5.85, p < .001, d = 1.51$. Parents of children in the ADHD-only group also reported more of these characteristics than did parents of children in the control group, $t(64) = 2.72, p < .01, d = .68$.
with positive characterizations of child symptomatic behavior. The present investigation explored characteristics associated with stress associated with ADHD symptoms. Characterizations may act as a buffer against the familial views of the child both now and in the future. Positive parent–child interactions and emotions and more positive perceptions of children with no identified diagnosis. Thus, parents in both ADHD groups appeared to recognize and respond negatively to child disruptive behavior, but those in the ADHD-Indigo group also reported positive perceptions and predictions for their child.

The main finding of this study was that parents of children diagnosed with ADHD who also interpreted symptoms positively (ADHD-Indigo group), compared with parents of children diagnosed with ADHD who do not report these positive perceptions (ADHD-only group), reported fewer negative interactions with their child and less intense discouragement and frustration as a result of those events. They also rated their child as more self-efficacious, more likely to experience positive life events in the future, and less likely to experience future negative life events. These differing interpretations and expectations emerged despite the fact that parents whose children had been diagnosed with ADHD, whether in the ADHD-only or ADHD-Indigo group, reported more and more severe child ADHD symptoms, more conflicts, and more intense negative emotions than did parents of children with no identified diagnosis. Thus, parents in both ADHD groups appeared to recognize and respond negatively to child disruptive behavior, but those in the ADHD-Indigo group also reported positive perceptions and predictions for their child.

The differences found in the perceptions of the ADHD-only and ADHD-Indigo groups are particularly meaningful within the context of the control group. First, ADHD symptom reports of parents in the ADHD-only and ADHD-Indigo groups did not differ significantly, whereas both differed from those of control parents. Second, parents in the ADHD-Indigo group reported more child-related negative events and discouragement than did those in the control group, but they also reported fewer negative events and less discouragement and frustration than did parents in the ADHD-only group. Third, parents in the ADHD-Indigo group were comparable with those in the control group in their perceptions of child self-efficacy and optimism for their child's future. These results reveal that perceiving positive aspects in children's symptomatic behaviors, rather than viewing these behaviors only as reflecting a disorder, is related to fewer reported negative parent–child interactions and emotions and more positive views of the child both now and in the future. Positive characterizations may act as a buffer against the familial stress associated with ADHD symptoms.

**Implications for Parent–Child Interactions**

The present investigation explored characteristics associated with positive characterizations of child symptomatic behavior in a group of parents that holds unusual beliefs about their children. All measures were reported by parents and not subject to independent verification. It is therefore critical that the findings and inferences made within this framework not be overgeneralized to all parents and parent–child relationships, but we identify parallels in the broader literature regarding parent–child interactions related to ADHD symptoms in the following. Recent evidence suggests that positive parent–child interactions and positive perceptions of children may lessen the impairment associated with ADHD. In a recent study, the quality of the mother–child relationship predicted child functioning above ADHD symptoms; children suffered less functional impairment if they had positive relationships with their mother (Healey, Gopin, Grossman, Campbell, & Halperin, 2010; see also Healey & Rucklidge, 2006). Interventions that encourage others to focus on the positive characteristics of children with ADHD have been shown to reduce peer rejection of these children (Mikami et al., 2005), and training parents to facilitate peer interactions also reduces peer rejection and increases acceptance (Mikami, Lerner, Griggs, McGrath, & Calhoun, 2010). This evidence, though sparse, suggests that parents’ perceptions of child behavior may be critically important to the parent–child relationship and to the child’s subsequent functioning, although this proposition remains to be directly tested. Of course, merely changing parents’ perceptions of their child's behavior cannot alleviate child behavioral problems or parent–child conflict, but the present findings combined with past research suggest that positive views of symptomatic behavior can buffer some of the negative effects of an ADHD diagnosis.

The findings related to perceived child self-efficacy and optimism may be particularly important for treatment adherence and outcomes. Despite the severe consequences of ADHD for the family, treatment adherence rates are low (e.g., Charach et al., 2004; Pescosolido et al., 2008). Generally, perceptions of control and optimism are associated with greater persistence on difficult tasks and more positive evaluations of progress (Felson, 1984; Vasta & Brockner, 1979). Beliefs about efficacy are associated with motivation and efforts to succeed (Bandura, 1977; Dweck & Licht, 1980). Similarly, optimism about future outcomes is associated with more persistence and motivation (Atkinson, 1964; Mischel, 1973). Parents who are able to maintain beliefs in their child’s self-efficacy and optimism for their child’s future, despite problematic behavior, may be more motivated to remain involved and encourage their child’s continuing involvement in treatment. Importantly, it is also possible that unrealistically positive parental perceptions, such as those that hold others accountable for any conflicts surrounding the child, may maintain dysfunctional child behaviors and peer interactions as well as resulting in disengagement from treatment or consultations with teachers and other professionals. Additional research is needed to test these possibilities.
and to identify the potential negative as well as positive consequences of parental optimism for child and parental functioning.

**Methodological Issues and Limitations**

Inferences drawn from this investigation must be constrained by the fact that all of the information obtained was based on parent report from a small and nondiverse sample. This methodology was appropriate because the purpose of the present investigation was to explore how parents’ categorization of their child’s behavior relates to parental experiences with and perceptions of the child and how recruitment of a sufficient number of parents from the Indigo movement required Internet surveys. Parents in the ADHD-Indigo group hold unusual beliefs about their child and potentially about the world more generally, and therefore, the findings should not be overgeneralized to all parents or parent–child relationships. However, the processes evident in unusual groups can shed light on processes that characterize more typical relationships. Our purpose here was to explore one such group. Additional investigation is needed to determine how differences in interpretation of child behavior might relate to observable parent–child interactions and whether parents’ perceptions predict child functioning, achievement, and social interactions. Research is also needed on how such parental perceptions guide or delimit the treatment options available to the child (Johnston & Mash, 2001).

This study was also limited by the possibility that differences in symptom severity or incorrectly reported diagnoses, rather than in parents’ categorization of behavior, may have driven the group differences. The possible impact of this limitation on the present investigation is lessened by the fact that parents of children in both the ADHD-only and ADHD-Indigo groups reported that their child had been diagnosed with ADHD by a clinician, parental ratings of symptom severity were comparable, and differences between groups remained comparable after controlling for symptom severity. A related concern is that the tendency to view child behavior in a positive light might reflect dispositional differences among parents or children. It is critical that additional research include other sources of symptom information, including clinician observations and teacher reports.

**Clinical Implications and Conclusions**

Accurate diagnosis is critical to identify and treat mental disorders, and these findings should in no way be taken to imply that diagnosis is unnecessary or harmful. Nor do the findings negate the possibility that parents’ unconventional views about their children may be associated with negative parental or child outcomes that were not measured in this study. Rather, they suggest that parents of children with a behavioral diagnosis may be more able to appreciate their child’s positive traits and behaviors if they tend to view symptomatic behavior in a positive light. Two parents may experience the same child behavior such as a child repeatedly interrupting people and finishing their sentences for them. One parent may label this behavior as a sign that the child is unable to control his or her impulses, whereas another parent may categorize this behavior as a sign that the child is intuitive and intelligent. The child’s behavior is identical in both cases and considered symptomatic of ADHD. The two parents, however, are likely to react quite differently to the repeated interruptions. The parent who views the behavior as a sign of positive characteristics is likely to experience less frustration and disappointment with the child—and perhaps fewer negative interactions—than the parent who views the behavior as purely symptomatic. It is also important to note that all parents of children identified with ADHD, including those that held unusual beliefs, reported more and more intense child ADHD symptoms, more conflicts, and more negative emotions than did parents of children with no identified diagnosis. Thus, parents with unusual beliefs made reports and judgments that appeared to at least partially reflect realistic assessments of their situation. It was not the case that positive interpretations of child behavior eliminated parental distress or awareness that the child’s behavior is problematic but rather that parental stress was lessened and that parents were able to maintain positive views of their child and their child’s future despite problematic behavioral patterns.

Parents who held positive interpretations of their child’s symptomatic behavior reported fewer negative interactions with their child and less intense negative emotion during those interactions than parents of children who did not hold those interpretations. Indeed, for the relatively more subjective measures of child self-efficacy and judgments about the child’s future, parents who held positive interpretations of behavior did not differ from parents of children with no psychiatric diagnoses. These findings suggest that positive interpretations of symptomatic behavior may help alleviate some of the effects of disruptive child behaviors on parents and families. The extent to which such positive parental perceptions may have unsalutary consequences, such as refusal to follow treatment recommendations or increased conflicts with others who view the child’s behavior as problematic, is an important question for future study.

**Acknowledgment**

The authors’ appreciate the parents who took time to tell the authors about their children, particularly Ariane for her enthusiastic support.

**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.
Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

Note
1. There are relatively few people involved in the Indigo movement, and data collection occurred via electronic surveys to reach a sufficient number of these participants. As parents were the source of all reports on these surveys, there was a concern that common method variance might account for some of the differences reported (in this case, common method variance would arise from common raters). Podsakoff, MacKenzie, Lee, and Podsakoff (2003) described several approaches to statistically address this issue within a single study where ratings from multiple observers were not possible. The most common approach is the Harman’s single-factor test, in which an exploratory factor analysis is conducted with all the variables from the study, and resulting factors are examined to determine whether one factor representing shared method variance accounts for a large portion of the variance in the study. This test revealed no factor on which all of the variables loaded significantly and positively; the variance accounted for by the first factor to emerge was 58%. A more conservative approach to assess common method variance is the “marker test,” in which a theoretically unrelated variable is included in the study, and correlations between that variable and all study variables are assessed. The theoretically unrelated variable “of the importance of spirituality in your home” was chosen for the marker test. This variable did not significantly correlate with any variable in the study (average p value was .44). These tests suggest that common method variance cannot account for the differences reported among groups.

References


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