

Manual-Based Personalized Intervention for Mothers of Children With SLD/ADHD: Effects on Maternal and Family Resources and Children's Internalizing/Externalizing Behaviors

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Abstract

Objective: This study explored manual-based personalized intervention for mothers of children with SLD and/or ADHD, as possibly contributing to (a) mothers' parenting-related emotional/coping resources, (b) family functioning, and (c) child adjustment, compared with a control group of mothers. **Method:** Participants were 73 mothers of a child formally diagnosed with SLD and/or ADHD ages 7-17. Mothers were assigned to an experimental (n=40) or control (n=33) group. Short-term intervention utilized a three-stage emotion–cognition–behavior model. Pre-post assessments included maternal affective resources (positive/negative affect, parenting stress), maternal coping resources (general coping strategies, coping specifically with diagnosed child's negative emotions), family cohesion/adaptability, and diagnosed child's externalizing/internalizing syndromes. **Results:** Significant interactions emerged between group (experimental/control) and time (pre/post) for most study variables. **Conclusion:** Findings clearly revealed the intervention's significant impact. Only the trained mothers demonstrated significant gains over time for most of the maternal, family, and child indices, whereas the untrained mothers did not. (*J. of Att. Dis.* XXXX; XX(X) XX-XX)

Keywords

specific learning disorders, ADHD, externalizing/internalizing behavior problems, mothers, parenting coping strategies, positive/negative affect, family climate, parenting stress

The present study focused on manual-based personalized emotional–cognitive–behavioral intervention for mothers of youngsters with specific learning disabilities (SLD) and/or ADHD, in line with research suggesting that evidence-based psychosocial programs that directly target parenting as well as parents' coping and emotional resources are a primary change mechanism leading to improvements in the functioning of children with disabilities (e.g., Forehand, Lafko, Parent, & Burt, 2014; Haack, Villodas, McBurnett, Hinshaw, & Pffiffer, 2017). Such intervention holds promise in light of the vulnerability documented in families of a child with SLD and/or ADHD, as manifested in high levels of parenting stress, ongoing parenting challenges, and less optimal family climate (e.g., Antshel & Joseph, 2006; Cheung & Theule, 2016; Deault, 2010). As suggested by the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013), SLD and ADHD are among the most common disorders in school-age children, with 5% to 15% prevalence rates for SLD and 5% for ADHD, across different languages and cultures. Comorbidity of SLD and ADHD is relatively high,

with approximately 31% to 45% of youngsters with ADHD also exhibiting SLD and vice versa (DuPaul, Gormley, & Laracy, 2013).

Expanding evidence has suggested that SLD and ADHD symptoms are accompanied not only by the expected academic dysfunction due to children's learning and/or attention difficulties but also by a higher incidence of co-occurring socioemotional and behavioral problems compared with non-disabled peers (e.g., for SLD, Al-Yagon, 2016, Estell et al., 2008, Swanson, Harris, & Graham, 2013; for ADHD, McQuade & Hoza, 2008, Wehmeier, Schacht, & Barkley, 2010). For example, previous studies have identified greater

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risk of experiencing negative emotions such as depression and anxiety, both among youngsters with SLD (Lackaye & Margalit, 2006; Maag & Reid, 2006; Nelson & Harwood, 2011) and among those with ADHD (e.g., Weimer, Kerns, & Oldenburg, 2004), compared with their typically developing counterparts. Prior research also reported higher levels of externalizing and internalizing behavior problems such as aggression, delinquency, risk taking, and social withdrawal in youngsters with SLD (e.g., McNamara, Vervaeke, & Willoughby, 2008); and noncompliant, aggressive, interfering, and anxious behavior in children and adolescents with ADHD (Shaw, Stringaris, Nigg, & Leibenluft, 2014). Moreover, accumulating research has indicated that comorbid diagnoses of SLD together with ADHD pose particularly high risk of children's maladaptation, compared with children diagnosed with only these disorders (e.g., Al-Yagon, 2016).

Beyond the frequent implementation of child-centered treatments for children with SLD and/or ADHD (e.g., Kopelman-Rubin et al., 2013; Meinzer, Hartley, Hoogesteyn, & Pettit, 2017; Tannock et al., 2018), parenting-centered intervention has also been utilized as a primary method for promoting change in these youngsters' functioning (e.g., Forehand et al., 2014; Haack et al., 2017). Parents' own psychological resources and developmental histories are widely assumed to directly influence the quality of childrearing that they provide and, in turn, their child's development (Arteche & Murray, 2011; Belsky, Conger, & Capaldi, 2008; Belsky & Pluess, 2012), thus pinpointing parents' central role as change agents. However, most prior parent-intervention attempts targeted parents of children with ADHD or other externalizing symptoms (e.g., Coates, Taylor, & Sayal, 2015; Herbert, Harvey, Roberts, Wichowski, & Lugo-Candelas, 2013; Lee, Niew, Yang, Chen, & Lin, 2012) and rarely treated SLD samples (Danino & Shechtman, 2012), despite evidence indicating the high prevalence of socioemotional and behavioral difficulties in this population (e.g., Al-Yagon, 2016; Estell et al., 2008).

Furthermore, research on children with disabilities such as SLD and ADHD has suggested the possible bidirectional pathways at play between children's disability symptoms and their parenting (e.g., Haack et al., 2017), suggesting the potential additional systemic benefits of parent-focused intervention. Based on these assumptions, the present study explored an emotional-cognitive-behavioral intervention for mothers of children with SLD and/or ADHD, as possibly contributing to (a) mothers' parenting-related emotional and coping resources, (b) the family's climate, and (c) the disabled child's adjustment.

Mothers' Parenting-Related Emotional and Coping Resources

In line with the aforementioned reports on the vulnerability of parents of youngsters with SLD and/or ADHD to high

levels of parenting stress and ongoing parenting challenges, studies have also demonstrated these parents' lower emotional and coping resources, compared with parents of typically developing youngsters (e.g., Al-Yagon, 2015; Markel & Wiener, 2014; Theule, Wiener, Jenkins, & Tannock, 2013). Largely, such studies proposed that to provide optimal care, parents must possess sufficient emotional and coping resources, such as the ability to take others' perspectives and to regulate affect and impulses (e.g., Rholes, Simpson, & Friedman, 2006). Hence, the present study focused on measures of parenting-related maternal resources, both regarding affective resources (i.e., positive/negative affect and parenting stress) and resources for coping with the disabled child (i.e., general coping strategies and coping specifically with the child's negative emotions).

Mothers' Positive and Negative Affect

Positive and negative affect are considered general indicators of psychological well-being and stress reactions (Bono, McCullough, & Root, 2008). In parents of children with ADHD, a meta-analysis found much higher rates of depression and anxiety (negative affects) than in the general population (Cheung & Theule, 2016). Studies on affective resources among parents of children with SLD and/or comorbid SLD-ADHD likewise indicated higher negative affect and lower positive affect than among parents of children with typical development (Al-Yagon, 2007, 2009). Furthermore, Al-Yagon (2015) highlighted the potential role of parental affective resources in explaining parental coping resources in parents of children with SLD versus parents of typical children. Importantly, research also emphasized that youngsters with these disabilities might be more vulnerable to parents' less optimal affective resources than their nondisabled peers (Al-Yagon, 2010).

However, most family studies have not focused on the possible positive role of parents' affective resources, often limiting their investigation to parents' negative affect. Thus, an extensive body of literature on typical development has demonstrated that mothers' high levels of negative affect pose a major risk factor for children's maladjustment, from prenatal development through childhood and into adolescence (Arteche & Murray, 2011; Goodman & Gotlib, 2002). For example, children of depressed mothers show higher levels of behavior problems with peers, poorer academic performance, as well as increased evidence of clinical expressions such as mood disorders, anxiety, and disruptive behavior disorders (e.g., Cooper, Fearn, Willetts, Seabrook, & Parkinson, 2006; White & King, 2011). Furthermore, even in the absence of clinical psychopathology, mothers' high levels of negative affects such as anxiety or depression significantly contribute to mothers' lower quality of care and poorer interpretation and tolerance of their children's behaviors (Cummings, Keller, & Davies, 2005).

Mothers' Low Parenting Stress

Parenting stress—related to difficulties that emerge from the demands of parenthood—is assumed to influence parents' behaviors and well-being, as well as children's adjustment (Anthony et al., 2005). Prior research showed that parents of children with disabilities reported more elevated parenting stress than parents of children with typical development (e.g., Al-Yagon & Margalit, 2012; Cheung & Theule, 2016; Wiener, Biondic, Grimbos, & Herbert, 2016). In Theule et al.'s (2013) recent meta-analysis on parents of children with ADHD, children's severity of hyperactivity-impulsivity and inattention symptoms, as well as their externalizing and internalizing symptoms, were shown to play a role in parents' high levels of parenting stress. Several recent studies focused on stress among parents of youngsters with ADHD (e.g., Cheung & Theule, 2016; Hutchison, Feder, Abar, & Winsler, 2016; Theule et al., 2013; Wiener et al., 2016), but few recent data are available on parents of youngsters with SLD (Antshel & Joseph, 2006; Bonifacci, Storti, Tobia, & Suardi, 2016).

Mothers' Parenting-Related Coping Strategies

Coping strategies refer to a complex set of mechanisms via which parents adapt to stress (Folkman & Moskowitz, 2004; Lyons, Leon, Roecker, & Dunleavy, 2010), comprising both cognitive and behavioral efforts utilized to manage external and internal demands that tax an individual's resources (Folkman & Moskowitz, 2004). Prior research has emphasized the role of coping strategies as central mediators of potential stress-related responses that affect well-being, behavior, and adjustment (Abery, 2006; Al-Yagon & Margalit, 2012; Timko, Cronkite, & Moos, 2010). In particular, coping strategies have been shown to provide a protective role in moderating the caregiving stress experienced by parents of children with disabilities. For example, several studies showed that high levels of problem-focused coping and low levels of emotion-focused coping buffered the impact of high stress levels on maternal well-being in mothers of children with intellectual disabilities (Margalit, Al-Yagon, & Kleitman, 2006; Wang, Michaels, & Day, 2011). Research studies on parents of children with SLD have also reported higher levels of avoidant coping strategies compared with parents of typically developing children (Al-Yagon, 2007).

Along with investigating the current intervention's possible contribution to maternal strategies for coping with the stressors involved in raising a child with disabilities, the present study specifically explored mothers' strategies for coping with these children's negative emotions, which may be implicated in the dynamic bidirectional associations found between parenting and child behavior (e.g., Fabes,

Poulin, Eisenberg, Madden-Derdich, 2002). Briefly, prior studies have explored mothers' adaptive strategies such as encouraging the child to express negative affect, comforting and helping the child feel better, and helping the child solve problems or cope, as well as mothers' nonadaptive strategies such as minimizing the situation's seriousness or devaluing the child's distress (e.g., Eisenberg, Fabes, & Murphy, 1996; Fabes et al., 2002). For example, findings from these studies reported that parents who comfort their children and discuss their negative emotions may enhance children's abilities to express emotion in a socially appropriate manner and may modulate children's arousal (e.g., Eisenberg et al., 1996). Such studies also suggested that parental strategies such as providing support or encouraging children in emotionally arousing situations may enhance children's ability to deal instrumentally with negative situations, which, in turn, may enhance their feelings of competence and self-regulation with negative emotions. In contrast, parental responses such as distress, minimization, and punishment were associated with children's avoidant behavior and lower social skill levels. Although rarely examined in parents of children with SLD, a recent study on such families reported the contribution of individual and group parental interventions to strategies for coping with children's negative emotions (Danino & Shechtman, 2012).

Family Functioning

The family's quality of functioning may provide an important perspective for understanding mothers' well-being as well as children's and adolescents' adjustment (e.g., Henry, Sheffield Morris, & Harrist, 2015). Family systemic theories appraised two main components as important for evaluating family functioning: Cohesion refers to family members' extent of emotional bonding, whereas adaptability reflects the family system's ability to change in response to developmental and external pressures—as manifested in changes in family leadership, role relationships, and relationship rules (e.g., Olson, 2011). Families that demonstrate moderate scores on these two dimensions of cohesion and adaptability are considered balanced and optimally functioning (e.g., Henry et al., 2015; Patterson, 2002).

Prior research accentuated the important role of family functioning in understanding the adjustment of youngsters with SLD and ADHD. For example, in families of adolescents with ADHD, family cohesion not only revealed a direct effect on adolescents' adjustment after controlling for ADHD symptoms, age, and medication status, but also mediated the relations between ADHD symptom severity and life quality (Schei, Nøvik, Thomsen, Indredavik, & Jozefiak, 2015). Family cohesion was also found to mediate the association between adolescents' self-reported emotional and conduct problems and their quality of life.

The Current Study

Taken together, this study aimed to investigate a manual-based personalized intervention for mothers of children with SLD and/or ADHD, as possibly contributing to mother, family, and child variables. Mothers of youngsters with formally diagnosed SLD and/or ADHD were assigned to either an experimental or control condition, to test three major hypotheses regarding treatment effects. At Time 2, compared with mothers in the control group, the mothers in the intervention group were expected to report greater gains in (a) maternal parenting-related resources (higher positive affect, lower negative affect, lower parenting stress, more active coping strategies, fewer avoidant coping strategies, more positive reactions, and fewer negative reactions to children's negative emotions), (b) their perceptions of family's functioning (higher cohesion and adaptability), and (c) their perceptions of their disabled child's adjustment (fewer internalizing/externalizing behavior symptoms).

Method

Participants

The study comprised 73 mothers, each with a child formally diagnosed with SLD and/or ADHD. Mothers were assigned either to the experimental group (receiving individual maternal intervention, $n = 40$) or the control group (without direct maternal intervention, $n = 33$).

Maternal intervention group ($n = 40$). These mothers were aged 32 to 52 years ($M = 42.10$ years, $SD = 5.50$ years), with 12 to 20 years of education ($M = 14.90$ years, $SD = 2.23$ years), including 35 who were married and five who were divorced. Regarding work status, 25 worked full time, 11 part time, and four did not work outside home. Regarding mothers' own disabilities, two (5%) reported writing difficulties, three (7.5%) mathematical difficulties, nine (22.5%) inattention and/or hyperactivity-impulsivity difficulties, and five (12.5%) comorbid symptoms of SLD and ADHD.

Maternal control group ($n = 33$). These mothers were aged 30 to 55 years ($M = 41.90$ years, $SD = 5.50$ years), with 12 to 20 years of education ($M = 15.10$ years, $SD = 2.57$ years), including 27 who were married and six who were divorced. With regard to maternal work status, 19 worked full time, 10 worked part time, and four did not work outside the home. Regarding the mothers' own disabilities, four (12%) reported mathematical difficulties, seven (21%) inattention and/or hyperactivity-impulsivity difficulties, and eight (24%) comorbid symptoms of SLD and ADHD.

Analyses (t test, chi-square) revealed no significant differences between the two groups regarding mothers' age, education, marital status, work status, or own disabilities ($p > .05$).

Children's description. Each study participant had a child who attended an urban public school in central Israel and who had been formally diagnosed with SLD and/or ADHD. Of the 73 children, 29 were boys (64.4%), and ages were 7 to 17 years ($M = 10.98$ years, $SD = 2.85$ years). No significant differences emerged between the two mother groups on children's age or sex ($p > .05$), despite the children's and adolescents' wide age range.

Following administration of a well-accepted diagnostic testing battery, all children had received a formal diagnosis of SLD and/or ADHD in line with the *DSM-5* diagnostic features and the Israeli Ministry of Education's educational policy. Thus, children who had received an SLD diagnosis based on psychoeducational evaluation by a psychologist or didactic diagnostician had demonstrated substantially lower achievements on standardized tests (in reading, writing, and/or mathematics) than expected for their age, which caused significant interference with academic performance or activities of daily living. Likewise, children received an ADHD diagnosis based on previous neurological or psychiatric evaluation, which included clinical interview, computerized tests, and widely used measures of ADHD symptom severity in children and adolescents (e.g., Conners Rating Scales-Third Edition; Conners, 2008). As reported by the mothers and as confirmed by the "Nitzan" national organization for children and adults with SLD/ADHD, 29 children had received only an SLD diagnosis (experimental group: 28%, $n = 11$, seven boys and four girls; controls: 53%, $n = 18$, eight boys and 10 girls), 19 children had received only an ADHD diagnosis (experimental: 32%, $n = 13$, 11 boys and two girls; controls: 19%, $n = 6$, four boys and two girls), and 25 children had received comorbid SLD and ADHD diagnoses (experimental: 40%, $n = 16$, 11 boys and five girls; controls: 28%, $n = 9$, six boys and three girls). This sample's high prevalence of comorbid SLD and ADHD (34.2%) resembled *DSM-5* estimates of 31% to 45% SLD-ADHD comorbidity (DuPaul et al., 2013). Note that the experimental group showed a relatively larger proportion of the high-risk comorbid diagnoses, suggesting that any significant findings of the intervention would indicate its effectiveness even among this more at-risk group. Nonetheless, preliminary analyses indicated no significant effect of children's disability classifications on study variables (see "Results" section).

According to mothers' reports about the school accommodations from psychoeducational staff and specific other interventions that their children received during the period between Time 1 and Time 2, in the experimental group, 17 children (43%) received learning instruction and remediation, two (5%) received child-focused psychological intervention, and 20 (50%) received medical treatment (stimulant medication). In the control group, 12 children (33%) received learning instruction and remediation, three (9%) received child-focused psychological intervention, and six

(18%) received medical treatment (stimulant medication). Regarding academic functioning, mothers reported that these children manifested difficulties in one or more area: reading (experimental: 51%, $n = 18$; controls: 46%, $n = 11$), writing (experimental: 51%, $n = 18$; controls: 58%, $n = 14$), and mathematics (experimental: 17%, $n = 6$; controls: 8%, $n = 2$). Mothers also reported that 22 (65%) of the children in the experimental group and 10 (44%) of the children in the control group received a variety of academic testing accommodations from the school psychoeducational team.

The Manual-Based Personalized Intervention for Mothers

The manual-based personalized short-term intervention was based on the “Emotional-Cognitive Coaching” (ECC) program (Danino, 2012), aiming to guide mothers in coping with a child having SLD/ADHD. Mothers met individually with an SLD–ADHD “coacher” who had a professional therapeutic background (psychologist, social worker, school counselor, etc.), for 12 weekly 1.5-hr sessions focusing on the exploration of mothers’ emotions, thoughts, and behaviors regarding their parenting of their diagnosed child.

The current intervention offered a unique combination of structure and content. On one hand, the intervention systematically applied a structured intervention via an individual treatment delivery mode with parents. On the other hand, the current structured emotional–cognitive–behavioral intervention was personally tailored to the contents raised by each parent, affording direct relevance to the specific parent, child, and family’s difficulties and strengths. The ECC intervention structure and strategies were influenced by cognitive–behavioral psychological theories, based on positive psychology, and grounded in Hill’s (2005) three-stage emotion–cognition–behavior model (emotional awareness, insight, and action). On the other hand, this structured emotional–cognitive–behavioral intervention was personally tailored to the contents relevant to and raised by each mother of a child with SLD and/or ADHD, thereby affording direct application to the specific parent, child, and family’s difficulties and strengths.

Over the 12 weeks of the personalized intervention, the structured topics included maternal involvement in parenting children with special needs; enhancing positive mother–child dialogue; coping with these children’s behavior problems; identifying children’s fears, weaknesses, and strengths; identifying mothers’ values; enhancing effective maternal parenting strategies; and more (Danino, 2012). For each topic, the mother was asked to select relevant everyday difficulties that she and her child experienced, with attention to analyzing mothers’ affective reactions, insights into thinking processes, and analysis of behavior patterns regarding the topic at hand—while guiding mothers toward change as tailored to that particular child–mother dyad’s complex patterns and predicaments.

For example, in the simulated “parenting fitness center” unit of the manual (Sessions 9–11), one mother of a child with comorbid ADHD and SLD chose to set up systematic “exercises” to practice coping better with her adolescent daughter’s executive functioning deficits as they affected her readiness for school (including backpack disorganization, forgetting assignments and tests, inadequate study habits, etc.). These difficulties required the mother to closely monitor and intervene in her daughter’s everyday schedule, organization, and schoolwork, to the detriment of her daughter’s sense of efficacy and autonomy. Thus, the ECC aimed to help the mother reduce her feelings of helplessness and repeated failure and gain insights while struggling with crises and conflicts related to these executive deficits, to refine her skills and action patterns, to improve various relationships that may afford greater social support and satisfaction, and to achieve emotional states that cultivate hope and foster faith—all of which may establish a stronger foundation for genuine dialogue with her child.

The SLD–ADHD coaches underwent training in parent intervention by Nitzan experts and received experts’ supervision throughout the intervention. Supervision included checks for fidelity to the ECC program.

Measures

All mothers completed six instruments at Time 1 and again at Time 2: four self-reports (mothers’ affect, parenting stress, general strategies for coping with their diagnosed child, and specific strategies for coping with their diagnosed child’s negative emotions), a report on perceptions about family climate, and an evaluation of the diagnosed child’s functioning. Each mother also reported her own demographics (e.g., age, marital status, education, socioeconomic status [SES]), her child’s demographics (e.g., age, sex), and her own and her child’s SLD/ADHD diagnosis/treatment history, including, as relevant, indices of comorbid psychopathology; previous and current psychiatric/neurological or psychodidactic diagnostic evaluations; diagnoses including specific disabilities in reading, writing, mathematics, attention, hyperactivity; specific interventions received in and out of school; and testing accommodations.

Affect Scale. This emotional self-report comprised two factors: *positive affect* (including Positive Affect and Self-Confidence subscales), with 14 items such as “friendly,” “energetic,” and “happy” (Cronbach’s $\alpha = .86$ at Time 1, $\alpha = .92$ at Time 2) and *negative affect* (including Negative Affect and Global Depression subscales), with 14 items such as “feel guilty,” “worthless,” or “worried” (Cronbach’s $\alpha = .88$ at Time 1, $\alpha = .89$ at Time 2; Moos, Cronkite, Billings, & Finney, 1987; Hebrew adaptation: Margalit & Ankonina, 1991). Mothers rated the extent to which the 28 items reflected their own affect, on a 5-point Likert-type

scale ranging from *not at all appropriate* = 1 to *very appropriate* = 5. Prior studies indicated this scale's reliability and construct validity (e.g., Al-Yagon, 2015; Moos, Cronkite, Billings, & Finney, 1987).

Parenting Stress Index–Short Form. This 36-item self-report tapped the mother's distress and unhappiness in her parenting role with respect to her diagnosed child, on a 5-point Likert-type scale ranging from *strongly agree* = 1 to *strongly disagree* = 5 (Abidin, 1990; Hebrew adaptation, Weisel, Most, & Michael, 2007). Items covered three domains: subjective distress (e.g., "I feel trapped by my responsibilities as a parent"), mother-child interactions (e.g., "When I do things for my child I get the feeling that my efforts are not appreciated very much"), and children's difficulties (e.g., "There are some things my child does that really bother me a lot"; "My child gets upset easily over the smallest thing"). Prior research indicated this scale's reliability and construct validity (e.g., Antshel & Joseph, 2006). In the current study, Cronbach's alphas were .91 at Time 1 and .87 at Time 2. To be noted, higher scores on this scale reflected lower perceived parenting stress.

Coping scale. In this 20-item self-report, mothers first described a problem related to their diagnosed child in the past year and then rated the extent to which each item reflected their general coping strategies for dealing with it, on a 4-point Likert-type scale ranging from *not appropriate* = 1 to *yes, fairly often* = 4 (Moos et al., 1987; Hebrew adaptation: Margalit, Raviv, & Ankonina, 1992). Two coping factors emerged: *avoidant coping* (nine items, e.g., "Tried to reduce tension by eating more"; $\alpha = .60$ at both Time 1 and Time 2) and *active coping* (11 items, e.g., "Made a plan of action and followed it"; $\alpha = .79$ at Time 1, $\alpha = .67$ at Time 2). Prior studies indicated this scale's reliability and construct validity (e.g., Al-Yagon, 2015; Moos et al., 1987).

Coping With Children's Negative Emotions Scale (CCNES). This 72-item self-report assessed mothers' positive and negative reactions to 12 difficult, emotion-provoking situations that their diagnosed child may face (e.g., being teased by peers or embarrassed in public, Fabes, Eisenberg, & Bernzweig, 1990; Hebrew adaptation, Shechtman & Birani-Nasaraladin, 2006). For each situation, mothers were asked to rate on a 7-point scale how likely they would react using each of six responses, which formed two broad subscales: distress, punitive, and minimization comprising *negative responses* (e.g., "I tell my child that if he or she starts crying, he or she will have to go to his or her room right away") and encouraging, emotion-focused, and problem-focused reactions comprising *positive responses* (e.g., "I comfort my child and try to make him or her feel better"). Prior studies indicated this scale's reliability and construct validity (e.g., Fabes et al., 2002; Shechtman & Birani-Nasaraladin, 2006).

Here, Cronbach's alphas for the six specific parenting responses for coping with children's negative emotions were .69 to .89 at Time 1 and .61 to .89 at Time 2.

Family adaptability and cohesion evaluation (FACES III). This 20-item scale assessed the mother's perceptions of her family climate, rated on a 5-point Likert-type scale ranging from *almost never* = 1 to *almost always* = 5 (Olson, Pertner, & Lavee, 1985; Hebrew adaptation, Teichman & Navon, 1990). The *Family Cohesion* subscale referred to emotional bonding, family boundaries, and time spent together, reflecting the degree to which family members were connected to or separate from their family (10 items, e.g., "Family members feel closer to other family members than to people outside the family"; $\alpha = .80$ at Time 1, $\alpha = .79$ at Time 2). The *Family Adaptability* subscale referred to areas such as leadership, discipline, roles, and negotiation, reflecting the extent to which the family system was flexible and changeable (10 items, e.g., "We shift household responsibilities from person to person"; $\alpha = .65$ at Time 1, $\alpha = .62$ at Time 2).

Child Behavior Checklist (CBCL). This 112-item standardized parent-report instrument assessed the mother's perceptions of her diagnosed child's emotional and behavioral problems, along on a 3-point scale ranging from *not true* = 0 to *very/often true* = 2 (Achenbach & Rescorla, 2001). Achenbach and Rescorla's (2001) principal components analysis yielded eight narrow-band syndrome scales and two broadband syndrome scales. The broadband *Internalizing Syndrome Scale* referred to internalizing symptoms such as withdrawal, somatic complaints, and anxiety/depression ($\alpha = .81$ at Time 1, $\alpha = .80$ at Time 2). The broadband *Externalizing Syndrome Scale* referred to externalizing symptoms such as delinquency and aggressiveness problems ($\alpha = .92$ at Time 1, $\alpha = .89$ at Time 2).

Procedure

After obtaining approval from the Tel-Aviv University Ethics Committee and from Nitzan, research team members contacted mothers whose children had been referred to Nitzan for diagnostic services for a suspected SLD/ADHD diagnosis. Team members (trained graduate students in SLD/ADHD) contacted mothers to inform them of study aims and procedures and to obtain consent. Then, in a quiet room at the Nitzan center, team members administered the research instrument set individually to all mothers in the sample, twice, 12 weeks apart.

Mothers whose children had completed the diagnostic evaluation and had expressed interest in the parent-intervention program ($n = 40$) were assigned to the experimental ECC group. These mothers completed the six instruments in the first intervention session (Time 1) and again 12 weeks

Table 1. Means, Standard Deviations, and *F* Scores for Study Variables by Group.

Instrument source	Scale/subscale	Intervention (<i>n</i> = 40)		Control (<i>n</i> = 33)		Group <i>F</i> (1, 71) (η^2)	Time <i>F</i> (1, 71) (η^2)	Time \times Group <i>F</i> (1, 71) (η^2)
		Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)	Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)			
Mothers' self-reported measures	Positive affect	3.64 (0.64)	4.00 (0.68)	3.57 (0.61)	3.66 (0.63)	0.10 (.00)	11.75 [†] (.14)	4.09* (.05)
	Negative affect	2.50 (0.77)	1.88 (0.69)	2.15 (0.69)	2.10 (0.66)	3.66 (.05)	21.40 [†] (.23)	14.81 [†] (.17)
	Parenting stress	3.06 (0.53)	3.48 (0.47)	3.40 (0.59)	3.43 (0.55)	5.32* (.08)	27.76 [†] (.28)	20.35 [†] (.22)
	Avoidant coping	1.78 (0.44)	1.94 (0.58)	1.63 (0.30)	1.74 (0.40)	3.21 (.05)	3.90 (.05)	0.12 (.00)
	Active coping	2.97 (0.64)	3.18 (0.46)	3.10 (0.44)	3.08 (0.44)	0.90 (.01)	2.34 (.03)	3.42 (.05)
	Positive reactions to child emotion	15.23 (3.12)	16.97 (2.56)	16.98 (2.07)	17.18 (2.25)	8.62** (.12)	12.00 [†] (.15)	7.60** (.10)
	Negative reactions to child emotion	9.34 (2.79)	7.62 (2.35)	8.24 (1.87)	8.18 (2.00)	1.64 (.02)	12.01 [†] (.15)	10.52** (.14)
Mother-reported family measures	Family cohesion	3.77 (0.54)	3.94 (0.60)	4.09 (0.53)	4.17 (0.47)	5.90* (.08)	6.50* (.08)	0.72 (.01)
	Family adaptability	2.73 (0.51)	2.95 (0.50)	2.83 (0.49)	2.76 (0.44)	0.29 (.00)	1.75 (.02)	6.86** (.09)
Mother-reported child measures	Internalizing behaviors	10.19 (6.39)	7.51 (5.17)	10.33 (7.20)	11.12 (7.80)	0.18 (.00)	1.80 (.02)	6.10* (.08)
	Externalizing behaviors	15.83 (10.24)	10.41 (8.52)	9.30 (7.77)	9.24 (7.74)	7.30** (.10)	12.73 [†] (.15)	12.17 [†] (.15)

p* < .05. *p* < .01 [†]*p* < .001.

later in the final intervention session (Time 2). A pool of mothers whose children were entering the diagnostic evaluation process were provisionally assigned to the control group and completed the instrument set at Time 1 in another room while their child was undergoing evaluation. From this pool, only those mothers (*n* = 33) whose children matched the experimental group's children (for their formal SLD, ADHD, or comorbid diagnosis, and for child age and sex variables) were assigned to the final matched control group. These mothers completed the research instruments at Time 2 when invited back 12 weeks later to discuss their child's diagnosis, and they did not participate in any parent-focused intervention in the interim.

Results

Preliminary and Descriptive Analyses

To examine pretest group differences (ECC vs. controls) on all the study variables and to decrease the chance of Type 1 errors, multivariate analysis of variance (MANOVA) was conducted for the 11 subscales: the seven self-reported maternal measures (positive/negative affect, parenting stress, active/avoidant strategies for coping with the child, and positive/negative responses to the child's negative emotion), the two mother-reported family measures (adaptability and cohesion), and the two mother-reported child maladjustment syndromes (externalizing and internalizing). This MANOVA yielded a significant main effect for study group, $F(11, 56) = 2.26, p < .05, \eta^2 = .31$. Table 1 presents the means, standard deviations, *F* scores, and partial eta-square values for the univariate analyses of variance (ANOVAs), revealing significant group differences at Time 1 for four study measures. Namely, compared with mothers in the control group, at baseline (Time 1) mothers in the

experimental group reported higher distress in their parenting role (i.e., lower Parenting Stress Index scores), fewer positive responses in coping specifically with their diagnosed child's negative emotions, lower perceived family cohesion, and more perceived externalizing behavior problems in their disabled child. Thus, prior to the intervention, the experimental group appeared to be at higher risk than the control group for parenting distress, less adequate maternal reactions to children's negative emotions, less optimal family cohesion perceptions, and perceptions of children's greater externalizing problems.

In addition, because the two groups differed slightly in the proportion of children's disabilities (see "Participants" section), MANOVA was conducted to examine the possible effect of children's disability classifications (SLD, ADHD, comorbid SLD-ADHD) for all study variables (i.e., 11 subscales) at Time 1: the seven self-reported maternal measures, the two mother-reported family measures, and the two mother-reported child maladjustment syndromes. This MANOVA yielded a nonsignificant main effect for children's disability classifications, $F(11, 56) = 1.25, p > .05, \eta^2 = .19$. Therefore, all further analyses regarding mothers and children were conducted while combining all child diagnoses together in each group.

Intervention Effects

Several analyses were conducted to explore the possible contribution of the ECC intervention. First, general linear model (GLM) analyses with repeated measures were conducted to examine the possible contribution of the ECC intervention to the (a) maternal emotional and coping resources, (b) family climate, and (c) child adjustment. These analyses were performed separately for each study measure using Time (1 vs. 2) as a within-participants factor

and Group (intervention vs. control) as a between-participants factor. Significant interactions were followed by Bonferroni post hoc tests. Table 1 presents the means, standard deviations, F scores, and partial eta-square values for the GLM analyses.

Mothers' parenting-related emotional and coping resources

Maternal affect. Separate GLM analyses with repeated measures were conducted for the two maternal affect subscales (Affect Scale; Moos et al., 1987). The GLM with repeated measures conducted for *positive affect*, with Time as the within-participants factor and Group as the between-participants factor, revealed a significant main effect for Time, $F(1, 71) = 11.75, p = .001, \eta^2 = .14$, and a significant Time \times Group interaction, $F(1, 71) = 4.10, p < .05, \eta^2 = .05$. As presented in Table 1 and Figure 1, although the two groups reported similar positive affect scores at Time 1, Bonferroni post hoc tests indicated significant group differences at Time 2, with a significant increase in positive affect exhibited only by the intervention group.

Similarly, outcomes from the GLM with repeated measures conducted for *negative affect* revealed a significant main effect for Time, $F(1, 71) = 21.40, p < .001, \eta^2 = .23$, and a significant Time \times Group interaction, $F(1, 71) = 14.80, p < .001, \eta^2 = .17$. Bonferroni post hoc tests (see Table 1, Figure 1) indicated that, at Time 1, the intervention group reported significantly higher negative affect scores than the control group, and, at Time 2, significant improvement (a decrease) in negative affect was exhibited only by the intervention group. Thus, results for the first emotional resource fully supported the study hypothesis.

Mothers' parenting stress. The GLM with repeated measures conducted for parenting stress revealed a significant main effect for Time, $F(1, 71) = 27.76, p = .001, \eta^2 = .28$, and a significant Time \times Group interaction, $F(1, 71) = 20.35, p = .001, \eta^2 = .23$. To be noted, in the Parenting Stress Index (Abidin, 1990), higher scores reflected lower perceived parenting stress. Thus, Bonferroni post hoc tests (see Table 1, Figure 1) indicated that, at Time 1, the intervention group reported significantly higher perceived parenting stress compared with the control group, and, at Time 2, significant improvement in this measure (higher scores reflecting lower perceived parenting stress) was exhibited only by the intervention group, thereby fully supporting the study hypothesis for intervention effects on this second emotional resource.

Mothers' general strategies for coping with their disabled child. A GLM with repeated measures was conducted for mothers' coping resources (active/passive strategies) for handling child-related situations (Coping Scale; Moos et al., 1987). As seen in Table 1, unexpectedly, results indicated no significant main effect for Time or interaction for

Time \times Group. Thus, results for this first (general) maternal coping resource did not support the study hypothesis.

Mothers' specific coping with their disabled child's negative emotions. Separate GLM analyses with repeated measures were conducted for the two maternal strategies for coping specifically with children's negative emotions (Fabes, Eisenberg, & Bernzweig, 1990). Analysis for the Negative Responses subscale (distress, punitive, and minimization) revealed a significant main effect for Time, $F(1, 71) = 12.02, p < .001, \eta^2 = .15$, and a significant Time \times Group interaction, $F(1, 71) = 10.52, p = .002, \eta^2 = .14$. Bonferroni post hoc tests (see Table 1, Figure 1) indicated that at Time 1, mothers in the intervention group reported significantly more negative responsiveness to the child's negative emotions than control mothers, and, at Time 2, significant improvement (a decrease) in negative responding was exhibited only by the intervention group.

Likewise, the analysis for the Positive Responses subscale (encouraging, emotion focused, and problem focused) revealed a significant main effect for Time, $F(1, 71) = 12.00, p < .001, \eta^2 = .15$, and a significant Time \times Group interaction, $F(1, 71) = 7.60, p = .007, \eta^2 = .10$. Bonferroni post hoc tests (see Table 1, Figure 1) indicated that at Time 1, mothers in the intervention group reported significantly less positive responsiveness to the child's negative emotions than mothers in the control group, and, at Time 2, significant improvement (an increase) in positive responding was exhibited only by the intervention group. Thus, results for this second (specific) maternal coping resource fully supported the study hypothesis.

Family climate. Separate GLM analyses with repeated measures were conducted for the two family climate subscales (FACES III; Olson, Pertner, & Lavee, 1985). Results for the Adaptability subscale showed a nonsignificant effect for Time but a significant Time \times Group interaction, $F(1, 71) = 6.90, p = .01, \eta^2 = .09$. Bonferroni post hoc tests (see Table 1, Figure 1) indicated no group differences at Time 1, and only the intervention group showed significant improvement (an increase) in mother-reported family adaptability at Time 2. Unexpectedly, no significant findings emerged for family *cohesion*; hence, findings only partially supported the hypothesis.

Child's internalizing and externalizing syndromes. Separate GLM analyses with repeated measures were conducted for the two broadband syndrome scales (CBCL; Achenbach & Rescorla, 2001). For the *externalizing* syndrome, results revealed a significant main effect for Time, $F(1, 71) = 12.73, p = .001, \eta^2 = .15$, and a significant Time \times Group interaction, $F(1, 71) = 12.20, p = .001, \eta^2 = .15$. Bonferroni post hoc tests (see Table 1, Figure 1) indicated that at Time 1, mothers in the intervention group rated their children as

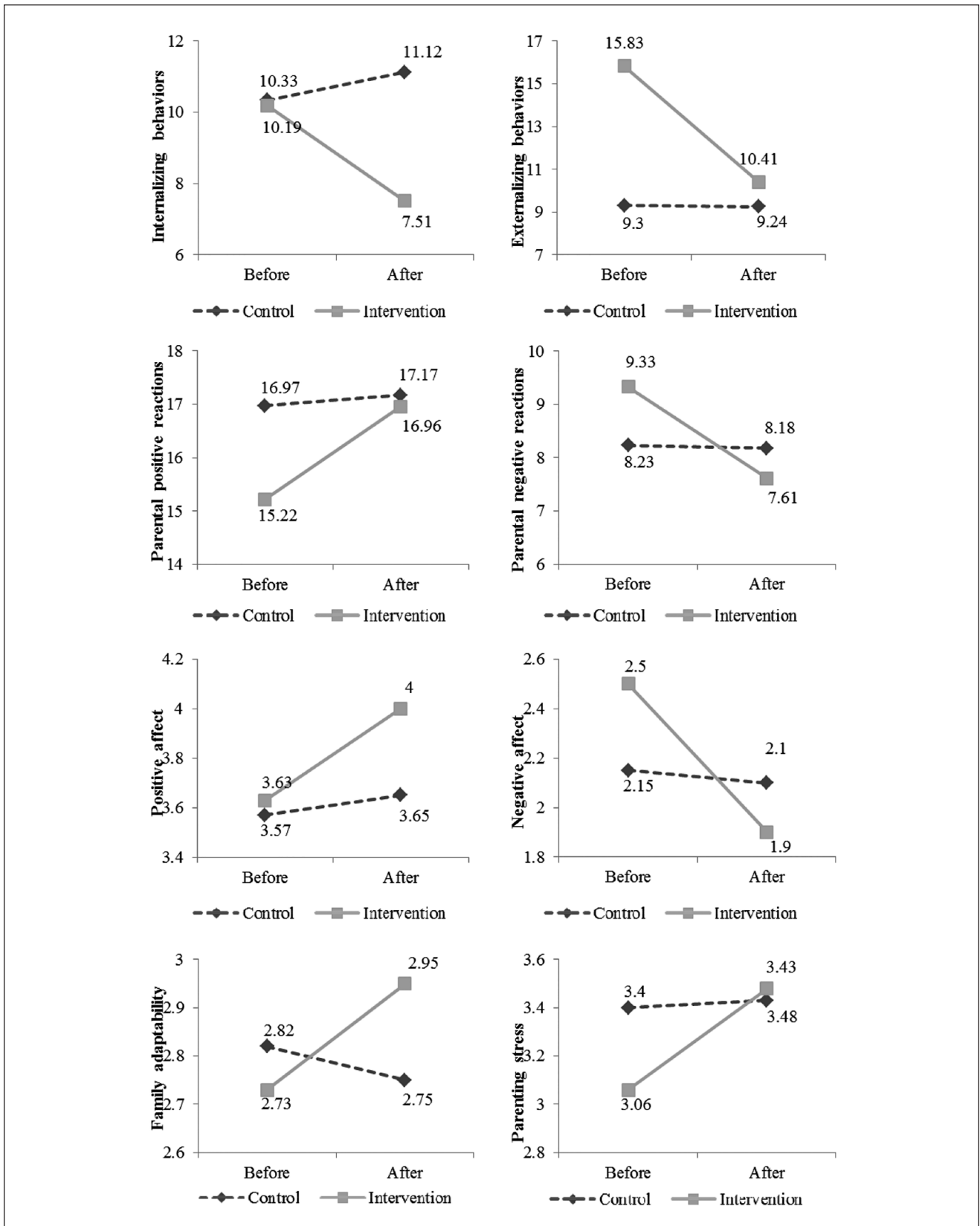


Figure 1. Significant intervention effects (pre/post) and group effects (intervention/control) for study variables by group.

Table 2. Regressions Testing the Contribution of Maternal Variables at Time 2 to Children's Externalizing and Internalizing Behavior Problems.

	Mothers' self-reports Predictor	Children's behavior problems			
		Externalizing		Internalizing	
		Standard β	T	Standard β	T
Step A	Parenting stress ^a	-.50	-3.52***	-.44	-3.04**
	Overall R ²		.25***		.19**
Step B	Parenting stress ^a	-.56	-3.44	-.52	-3.02**
	Positive affect	.33	1.67	-.05	0.27
	Negative affect	.13	0.58	-.50	0.61
	Overall R ²		.31**		.21*

^aHigher scores reflect lower perceived parenting stress.

* $p < .05$. ** $p < .01$. *** $p < .001$.

significantly higher in externalizing problems compared with mothers' ratings in the control group, and, at Time 2, significant improvement (a decrease) in perceived child externalizing maladjustment was exhibited only by the intervention group.

Regarding the *internalizing* syndrome, results revealed a nonsignificant main effect for Time and a significant Time \times Group interaction, $F(1, 71) = 12.18, p = .001, \eta^2 = .15$. Bonferroni post hoc tests (see Table 1, Figure 1) indicated no group differences at Time 1, significant group differences at Time 2, and significant improvement (a decrease) in perceived child internalizing maladjustment exhibited only by the intervention group at Time 2. Thus, the current findings fully supported the study hypothesis for maternal intervention's effects on children's maladjustment.

To specifically investigate the extent to which mothers' changes following participation in the manual-based ECC may have contributed to changes in their perceptions of children's behavioral difficulties, four separate linear regression analyses were conducted. First, two regressions were conducted examining the predictor variables of maternal emotional resources at Time 2 in a separate block (mothers' level of stress and positive/negative affect) as possibly explaining variation in each of the two child behavior measures: externalizing and internalizing behaviors. Overall, as seen in Table 2, the same pattern of findings emerged for each of the children's two behavior syndromes, with maternal level of stress contributing significantly to the variance in Step 1 (and in Step 2 for externalizing behavior), whereas maternal affect did not contribute significantly to the explanation of variance. The regression model for externalizing behaviors, $F(1, 39) = 5.35, p < .01$, explained an overall R^2 of 31%. The regression model for internalizing behaviors, $F(1, 39) = 3.28, p < .05$, explained an overall R^2 of 21%.

Second, two regressions were conducted with maternal coping resources at Time 2 (active/avoidant coping, negative/positive responses, and family climate) as explaining variation

in internalizing and externalizing behavior. However, neither of these regression models was significant.

Finally, as can be seen in Table 3, Pearson correlations showed a similar direction of findings in both mother groups. Thus, at Time 2, mothers' higher stress levels (i.e., lower scores on the Parenting Stress Index) were found to correlate significantly with children's higher rates of both externalizing behaviors (intervention group: $r = -.50, p < .01$; control group: $r = -.44, p < .01$) and internalizing behaviors (intervention group: $r = -.47, p < .01$; control group: $r = -.72, p < .001$). To be noted, despite these significant correlations for both groups, only mothers in the intervention group showed improvement at Time 2 in their level of stress.

Discussion

Although parental intervention is considered a primary evidence-based intervention for children's disruptive behaviors and ADHD symptoms (Coates et al., 2015; Forehand et al., 2014), such treatments have barely targeted parents of children with SLD explicitly (e.g., Danino & Shechtman, 2012), despite the two diagnoses' relatively high comorbidity as well as the high vulnerability manifested by families of children with SLD (e.g., DuPaul et al., 2013). Thus, the current intervention was delivered individually to mothers of children with an SLD and/or ADHD diagnosis, aiming to enhance these mothers' parenting-related emotional and coping resources, to promote family functioning, and to reduce their offspring's internalizing and externalizing maladjustment. Overall, as hypothesized, the findings clearly revealed the significant impact of this maternal intervention, showing significant interactions between group and time for most of the study variables. In other words, only the mothers who received intervention demonstrated significant gains over time for most of the maternal, family, and child indices, whereas the control mothers did not.

Table 3. Correlation Matrix of Study Variables at Time 2 for the Intervention and Control Groups.

Variable at Time 2	1	2	3	4	5	6	7	8	9	10	11
Intervention group ($n = 40$)											
1. Children's internalizing behaviors	—	.39*	-.44**	.08	-.07	-.07	.12	.07	.09	.27	-.18
2. Children's externalizing behaviors	.53**	—	-.50**	-.15	-.19	.02	.18	.05	-.20	.17	-.03
3. Parenting stress	-.72 [†]	-.47**	—	.43**	.22	.39*	-.53 [†]	.25	-.01	-.19	.28
4. Family cohesion	-.15	-.21	.40*	—	.32*	.51**	-.66	.50**	.09	.01	.15
5. Family adaptability	-.03	-.07	.13	.46**	—	.36*	-.13	.24	.13	-.19	.40*
6. Mothers' positive affect	.06	.20	.16	.40*	-.07	—	-.72 [†]	.55 [†]	-.08	.12	.42**
7. Mothers' negative affect	.30	.25	-.57 [†]	-.38*	.01	-.56**	—	-.39*	.07	-.04	-.21
8. Mothers' active coping	-.15	.18	.08	.07	-.27	.17	.00	—	.16	.06	.36*
9. Mothers' avoidant coping	-.00	.17	-.09	.17	.01	-.03	.19	.50**	—	.32*	.01
10. Mothers' negative responses	.20	.15	-.59 [†]	-.31	.10	-.18	.45**	-.37*	.16	—	-.36*
11. Mothers' positive responses	-.05	.02	.29	.52**	.28	.20	-.05	.02	.04	-.36	—
Control group ($n = 33$)											

[†] $p < .001$. * $p < .05$. ** $p < .01$.

In examining the extent of these mothers' personalized intervention gains, the initial baseline group differences should be considered too: Namely, before intervention, the experimental group initially demonstrated poorer scores than the control group in three areas: significantly higher maternal distress from parenting, mothers' fewer positive responses to the disabled child's negative emotions, and more externalizing behavior problems in their disabled child. Taken together, the current study outcomes, especially when validated by further research, may suggest the effectiveness of the present intervention in families of children with SLD and/or ADHD. Next, each of the study findings will be discussed in more detail.

Intervention Effects on Maternal Emotional Resources

Findings showed that the intervention led to clear improvements in mothers' affective measures as well as parenting stress levels. With regard to positive and negative affect (Moos et al., 1987), both groups started out with similar affect scores at the baseline, but only those mothers who underwent intervention demonstrated significant gains from Time 1 to Time 2—both a significant increase in positive affect such as feeling energetic and happy and a significant decrease in negative affect such as feeling guilty, worthless, and worried. Moreover, only those mothers who underwent intervention demonstrated a significant improvement from Time 1 to Time 2 in their experience of parenting stress (Abidin, 1990), even though these mothers were significantly more distressed by their parenting role at baseline than the controls.

These findings on the effectiveness of the intervention for improving maternal emotional resources may be of particular importance, considering that previous studies identified parents of children with SLD and/or ADHD as more

vulnerable to impairments in affective resources—lower positive affect and higher negative affect (e.g., Al-Yagon, 2007, 2009; Cheung & Theule, 2016), and as more vulnerable to elevated parenting stress (Al-Yagon & Margalit, 2012; Cheung & Theule, 2016; Theule et al., 2013; Wiener et al., 2016), compared with parents of typically developing children. Despite this vulnerability, studies investigating parent-intervention programs have only rarely included the parenting stress component, whether for parents of children with ADHD (see Coates et al., 2015, for a review) or with SLD (e.g., Shechtman, & Gilat, 2005). Interestingly, a meta-analysis of interventions for such parents reported by Coates et al. (2015) showed no evidence of significant treatment effects on parental well-being or stress.

Thus, the intervention gains in maternal affective resources found in the current study may expand knowledge on the potential for interventions such as *Coach Your Child to Success* (Danino, 2012) that can squarely address negative maternal affect and distress, elicit mothers' insight into the importance of positive affect, help mothers clarify how emotions are implicated in parenting, and teach maternal strategies for regulating feelings while interacting with children (Trute, Benzies, Worthington, Reddon, & Moore, 2010; Zahn-Waxler, Duggal, & Gruber, 2002). Such improvement in parental well-being may provide important protective factors for children due to prior evidence suggesting that youngsters with SLD and/or ADHD might be more vulnerable than their typical peers to depletion in parents' affective resources (Al-Yagon, 2010). As argued by an extensive body of literature, mothers' high levels of negative affect pose a major risk factor for children's maladjustment, from prenatal development through childhood and into adolescence (Arteche & Murray, 2011; Goodman & Gotlib, 2002). Parenting stress, in particular, has been emphasized as playing an important role not only in

understanding parental behaviors and well-being but also in children's adjustment (Anthony et al., 2005). In addition, systematic efforts are also needed to identify mothers with depressive tendencies who could benefit from individual therapy along with such parenting-focused intervention.

Intervention Effects on Maternal Coping Resources

Complex results emerged in the current study regarding mothers' resources for coping with their disabled child. On one hand, similar to prior studies (e.g., Danino & Shechtman, 2012), the current outcomes revealed significant improvement in the control mothers' use of effective coping strategies for dealing specifically with their child's negative emotions such as anxiety, nervousness about possibly embarrassing oneself in public, or negative feelings evoked by peer teasing. Significant intervention effects emerged for both broadband maternal coping strategy types vis-à-vis the disabled child's negative emotional expressions (Fabes et al., 1990). Thus, from Time 1 to Time 2, only mothers who underwent intervention revealed a significant increase in their positive responses such as encouragement (e.g., for the child to talk about his or her nervous feelings), emotion-focused reactions (e.g., to comfort the child), and problem-focused reactions (e.g., to help the child think of something else to do) as well as a significant decrease in their ineffective, negative maternal responses such as distress or punitive or minimizing reactions to their child's negative affective expression.

On the other hand, with regard to mothers' general coping in the face of problems associated with their disabled child (Moos et al., 1987), the present results unexpectedly did not show any group differences or intervention effects, either for maternal avoidant coping strategies (e.g., "I refused to believe it was happening" or "I tried to reduce tension through different means like medical herbs, herbal tea, medications, drinking") or active coping strategies (e.g., "I tried to find out more details about the situation" or "I weighed several possibilities for handling the problem"). This lack of intervention effects to increase mothers' active coping strategies and reduce their passive ones raises some important questions about mothers' transfer of the knowledge acquired in the parenting-focused intervention to real-life situations. In particular, the intervention's generalizability to everyday coping behavior should be examined in future modifications of the program, considering that while completing the Coping Scale (Moos et al., 1987), mothers responded to items in relation to their coping with a personally described situation involving their own disabled child. Despite this scale's broad prior utilization, its Avoidant Coping subscale showed relatively low reliability in the current study, thereby calling for exploration of its external validity. Designing intervention programs to explicitly empower mothers' everyday coping is crucial

because parents are assumed to utilize a complex set of coping mechanisms—cognitive and behavioral efforts to manage specific external and internal demands—to adapt to stress (Folkman & Moskowitz, 2004; Lyons et al., 2010). Data from previous studies have underscored the role of coping strategies as central mediators of potential stress-related responses that affect individuals' behavior, well-being, and adjustment (Abery, 2006; Timko et al., 2010).

Intervention Effects on Family Climate

Although unexpectedly, no significant findings emerged for the Family Cohesion subscale, the same pattern of outcomes emerged for family adaptability as for the maternal resource variables. Only those mothers who underwent intervention reported a significant improvement in family adaptability from Time 1 to Time 2, whereas the control mothers did not. Family adaptability reflects the family's ability to change in response to developmental and external pressures, as demonstrated through changes such as family leadership or relationship rules (Olson, 2011; Olson et al., 1985). The lack of significant intervention outcomes for family cohesion may stem from the present intervention's aims and core topics, which focused on helping mothers to enhance flexibility while applying various skills and to reshape behavioral patterns while struggling with crises and conflicts. Accordingly, intervention did not necessarily attempt to enhance the extent of emotional bonding between the family members (Olson, 2011), thereby calling for future inclusion of additional intervention components oriented toward family cohesion.

Intervention Effects on Children's Maladjustment

Finally, with regard to mothers' perceptions about the disabled child's behavioral problems, results of the GLM with repeated measures indicated that only mothers in the intervention group reported significant improvements in child adjustment, as manifested by significant decreases in ratings of both externalizing and internalizing syndromes from Time 1 to Time 2. Furthermore, findings of the regression and Pearson analyses, in particular, pinpointed the role of maternal stress level in explaining children's externalizing/internalizing behaviors. Previous studies showed that parents of children with disabilities reported more elevated parenting-role stress than parents of children with typical development (e.g., Cheung & Theule, 2016; Wiener et al., 2016) and also reported that parenting stress was associated with higher levels of oppositional defiant disorder and other externalizing behaviors in families of youngsters with ADHD (Wiener et al., 2016). Inasmuch as growing evidence emphasizes that youngsters with SLD and/or ADHD manifest a higher incidence of externalizing behaviors (e.g., aggression, delinquency, risk taking), as well as internalizing behaviors (e.g., anxiety, social withdrawal),

compared with their peers with typical development (e.g., McNamara et al., 2008), the present findings seem to be particularly noteworthy. This intervention outcome resembled that of prior intervention studies, most of which targeted parents of children with ADHD and conduct disorders (e.g., Coates et al., 2015; Forehand et al., 2014). However, the present study also highlighted the role of mothers' intervention in decreasing children's internalizing behaviors, which were less often examined among youngsters with SLD and ADHD.

Together, the present outcomes may raise some important questions regarding the possible associations between maternal emotional and coping resources and children's behavior problems. As suggested by Hutchison et al. (2016), the associations among these variables might be complex. Thus, whereas several research studies suggested that parents' coping resources lead both directly and indirectly to deficiencies in children's behavior regulation (e.g., Crnic, Gaze, & Hoffman, 2005), others argued that child behavior difficulties may impair parental coping resources and increase levels of stress (e.g., Tomanik, Harris, & Hawkins, 2004). Asserting that both of these directions are too simplistic, Hutchison et al. (2016) suggested the possible transactional framework as more appropriately capturing the bidirectional relationship between these constructs, and proposed that parent and child characteristics interact over time to influence and change one another. For example, children's low self-regulatory abilities may contribute to higher parental stress and dysfunction, and, at the same time, maladaptive parenting may contribute to increases in children's dysfunction.

Limitations, Directions for Future Study, and Implications

Despite its positive outcomes, the present study had several limitations in its design and variable selections. First, the current data derived only from mothers' reports, which may raise the possibility of conflating the examined relations. Further study should focus on additional sources of information to evaluate children's adjustment, such as teachers and peers, direct observations of the mother-child dyad's interactions, as well as children's self-report measures. Second, the current study focused only on children's externalizing and internalizing behavior problems, whereas their academic functioning was beyond the scope of this study. Future researchers would do well to investigate the possible contribution of this maternal intervention program on children's academic achievements and their motivation and effort investment in learning, as well as children's self-esteem and well-being.

Third, sampling issues should be considered. Thus, although no significant differences emerged between the two groups regarding mothers' age, education, marital status, work status, or own disabilities, these groups differed in

their recruitment procedures. The control group was at a very early stage of resolution with the child's diagnosis and, therefore, might have differed from the intervention group in mothers' appraisals of the diagnosis for themselves, their children, and their families. Also, although the current study did not find significant group differences in mothers' and children's variables according to disability classifications (SLD, ADHD, comorbid SLD-ADHD), it should be noted that the sample size did not enable investigation of children's specific SLD or ADHD classifications as predictors. Thus, future studies should explore SLD/ADHD subgroups (i.e., disorders in reading, writing, mathematics, combined, predominantly inattentive, predominantly hyperactive/impulsive), as well as other possible comorbidities such as obsessive-compulsive, conduct, or oppositional defiant disorders. In addition, the present sample size did not enable examination of the possible role of mothers' own SLD or ADHD symptoms, which have previously been reported as comprising an important risk factor in parenting (e.g., Johnston & Chronis-Tuscano, 2017). Another sampling issue is that, although the present study showed no significant group differences in mothers' marital status, the high incidence of intact families found in the present sample calls for caution to avoid generalizing these findings to families experiencing divorce or other family types. Finally, although the present study yielded clear improvements in mothers' and children's measures, further studies may do well to utilize longitudinal examination of intervention effects to avoid possible regression to the mean (i.e., a statistical phenomenon that can make natural variation in repeated data look like real change; e.g., Barnett, Pols, & Van Der Dobson, 2005).

Outcomes from the current examination of the maternal manual-based personalized intervention may hold theoretical and practical implications. Overall, the present findings supported prior studies' assumption regarding the role of parental intervention as an important primary mechanism of change to improve children's functioning (e.g., Haack et al., 2017; Lee et al., 2012). Based on the rare studies investigating such parenting-focused intervention for SLD samples, the present study extends knowledge regarding this topic. Also, the present findings, especially when validated by further research, hold significant implications for the three-stage emotional-cognitive-behavioral model (Hill, 2005) that was modified for families of children with SLD/ADHD (Danino & Shechtman, 2012), highlighting its possible contributions to maternal emotional and coping resources, family climate, and child adjustment.

Of particular importance, whereas the disability prevalence rates in adults are estimated to be approximately 4% for SLD and about 2.5% for ADHD (*DSM-5*), mothers in the present study reported higher rates of both disorders. Such findings were consistent with other studies among parents of children with SLD and ADHD (see Agha,

Zammit, Thapar, & Langley, 2013, for a review). As mentioned, parental disabilities such as ADHD and SLD symptomatology may pose risks to their children (Al-Yagon, 2015; Johnston & Chronis-Tuscano, 2017). In particular, parents' persistent symptoms of ADHD in adulthood have been linked with their children's more severe clinical presentation of ADHD symptoms and more symptoms of conduct disorder (Agha et al., 2013). Continued research should also explore children's susceptibility to both adverse and beneficial effects of parents' own disabilities. Outcomes from Johnston, Williamson, Noyes, Steward, and Weiss' (2016) study supported the similarity-fit hypothesis, suggesting that when both parents and children share similar ADHD difficulties, parents' symptoms may also moderate the possible challenges of families of children with ADHD.

Due to the possible high genetic heritability for SLD and ADHD syndromes (*DSM-5*), future studies on parental intervention may do well to investigate not only children's but also parents' SLD and/or ADHD symptoms. Also, because SLD and ADHD are more frequent in males than in females in the general population (*DSM-5*), such empirical exploration may narrow a gap in the literature on fathers specifically, who may be more vulnerable to SLD and/or ADHD symptoms. These results may also call for future practical implications in designing effective intervention for youngsters with SLD and/or ADHD, to take into account not only children's but also each parent's ADHD and SLD symptoms. Such intervention may especially focus on the possible association between parents' own disabilities and their self-regulatory abilities. As suggested by prior studies, to provide optimal care for their offspring, parents must possess sufficient emotional and coping resources, manifested in capacities like regulating impulses and affect and taking others' perspectives (Rholes et al., 2006).

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