Journal of Child and Family Studies (2021) 30:905–920
https://doi.org/10.1007/s10826-021-01908-4

ORIGINAL PAPER

Effectiveness of a Brief Preventive Parenting Intervention Based in Self-Determination Theory

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Accepted: 14 January 2021 / Published online: 1 February 2021

Abstract

This study examined the effectiveness of a two-session preventive parenting intervention, the Parent Check-In. The intervention, grounded in Self-Determination Theory (SDT), is designed to facilitate adaptive parenting, specifically autonomy support, structure and involvement, and parenting efficacy, and to increase autonomous self-regulation and decrease behavior problems in children. Fifty-seven parents of 8–12-year-olds ($M = 9.88$, $SD = 1.32$) were randomly assigned to an intervention ($N = 31$) or waitlist ($N = 26$) group. The intervention included psychoeducation about SDT, parenting strategies, and practice applying these strategies to families' situations. Parents and children completed questionnaires regarding parenting behaviors, children's self-regulation, and child symptomatology. Relative to the waitlist participants, intervention participants showed positive changes on some parenting indices, though the effects sizes were modest. In particular, intervention participants increased in parental efficacy, decreased in parent and child reports of controlling parenting strategies, and increased in child reports of parent autonomy support. Children of parents in the intervention group reported decreased externalizing symptomatology. There was some evidence that the intervention was more effective for parents with lower levels of education and parents with children higher in internalizing symptomatology at pre-test. Although some effects were not significant, the results show the promise of the Parent Check-In as a brief, preventive intervention. Ways in which the intervention could be strengthened are discussed.

Keywords Parenting intervention · Autonomy support · Prevention · Child symptomatology

Highlights

- Parent Check-In is a preventive intervention based in Self-Determination Theory.
- Effects on parenting/child problems studied with RCT with waitlist control.
- Parental autonomy support and parent efficacy increase relative to waitlist.
- Parent controllingness and child behavior problems decrease relative to waitlist.
- Effects stronger for less educated parents, children with more internalizing symptoms.

Parenting interventions are the treatment of choice for preventing emotional and behavioral problems in children (Kumpfer and Alvarado 2003). To date, a number of successful preventive parenting programs have been implemented, including the Positive Parenting Program (Triple P; Sanders et al. 2002), The Family Checkup (Dishion et al. 2008), and Parent Management Training (Forgatch and Patterson 2010). However, few empirically supported interventions are based on a theoretical model of parenting, and those that are typically fall under the rubric of applied behavior therapies (e.g., Forgatch and Patterson 2010). They tend to focus on behavior management and discipline with less focus on autonomy support, a key dimension of parenting in motivational theories. Given the importance of autonomy support for children's self-regulation and adjustment (Grolnick et al. 1997; Vasquez

Supplementary information The online version contains supplementary material available at https://doi.org/10.1007/s10826-021-01908-4.

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et al. 2016), interventions targeting this dimension are needed. The Parent Check-In was thus developed to address this gap as a preventive parenting intervention based on an empirically supported theory of motivation, Self-Determination Theory (SDT; Deci and Ryan 1985; Ryan and Deci 2017).

Self-Determination Theory Approach to Parenting

Self-Determination Theory is a theory of human motivation that posits three psychological needs—those for autonomy, competence, and relatedness. According to SDT, these needs are supported through environments including autonomy support, structure, and involvement, respectively. In parenting, autonomy support involves taking children's perspectives, supporting children's initiations, providing choice, allowing children input into decisions that affect them, and encouraging open discussion and joint decision-making (Grolnick and Ryan 1989). By contrast, controlling parenting includes being intrusive and coercive, pressuring children towards specific outcomes, ignoring children's perspectives, and solving problems for children (Grolnick et al. 1997). While controllingness may result in immediate compliance, it undermines children's longer-term internalization of adaptive values and behaviors (Grolnick et al. 1997). Structure, also referred to in the parenting literature as behavioral control or firm control (e.g., Barber et al. 2005), entails providing clear expectations, guidelines, and predictable consequences that help children anticipate outcomes and plan their behavior (Farkas and Grolnick 2010; Grolnick et al. 2014). Involvement, connected in the literature to acceptance and warmth (Skinner et al. 2005), refers to parents' dedication of time, attention, energy, tangible resources, and emotional support and warmth (Grolnick and Slowiaczek 1994).

According to SDT, when parents establish need-supportive environments, children will be most intrinsically motivated and show greater psychological well-being (Grolnick et al. 1997). They will also be more likely to autonomously regulate behaviors that are not naturally fun or interesting (Grolnick et al. 1997). The degree of autonomous self-regulation can be measured by children's reports of reasons why they engage in behaviors, ranging from external (e.g., to obtain a reward or to avoid punishment), to introjected (e.g., to avoid feeling guilty), to identified (e.g., for the perceived importance of the activity).

There is much evidence that parental autonomy support, structure, and involvement are associated with children's positive outcomes. Parental autonomy support is associated with children's higher school motivation and achievement (Joussemet et al. 2005; Soenens and Vansteenkiste 2005; Vasquez et al. 2016) and fewer behavior problems (Grolnick and Ryan 1989). Conversely, controlling parenting is linked to lower self-esteem and perceived competence (Soenens et al. 2005), and higher anxiety, depression and externalizing problems (Barber et al. 2005). These effects are also in evidence on a daily basis, with diary studies showing daily experiences of higher parental autonomy support and lower psychological control related to children's reports of daily well-being (van der Kaap-Deeder et al. 2017). Parental structure has been linked to children's higher perceived competence, perceived control, academic engagement and achievement, self-worth, and fewer externalizing problems (Farkas and Grolnick 2010; Grolnick et al. 2014; Skinner et al. 2005). Parental involvement is related to children's positive motivational and emotional functioning (Grolnick and Slowiaczek 1994). Given the relations between these parenting dimensions and children's adaptive outcomes, the Parent Check-In, based in SDT, was designed to increase parents' provision of autonomy support, structure, and involvement and to decrease children's behavior problems.

Preventive Parenting Interventions

The preventive intervention targeted parents who wished to improve their parenting but whose children were not currently receiving mental health services. Recent work supports the effectiveness of such preventive interventions. A meta-analysis of the Positive Parenting Program, a multi-tiered parenting intervention, showed moderate effect sizes for problematic parenting and child behaviors (Nowak and Heinrichs 2008). The Family Check-Up (Dishion et al. 2008), a brief, three-session preventive intervention, has been effective in reducing child problem behaviors and in increasing positive behavior support (e.g., involvement, proactive parenting) in parents of children ages 2–3 (Dishion et al. 2008) and in decreasing antisocial behavior and substance use in middle school youth (Stormshak et al. 2011). Prevention-focused interventions show improvements in parenting, including positive interactions, effective discipline, open communication, and increased school involvement (Sandler et al. 2015), with improvements sustained over time (Yap et al. 2016).

Parental efficacy, or parents' sense of their capacity to positively influence their children (Coleman and Karraker 2003) is another important outcome that has received less attention in preventive studies. A sense of efficacy empowers parents to strengthen their parenting strategies and support their children's adjustment, and parent efficacy has been associated with parenting competence (Jones and Prinz 2005). Parenting interventions have been shown to increase parental efficacy (e.g., Wittkowski et al. 2016).

Despite these important findings, key gaps in available parenting interventions remain. In addition to the dearth of theory-based interventions and those focused on autonomy support, most parenting interventions are group-based and involve 8–10 sessions. Low enrollment and high dropout are common (Assenany and McIntosh 2002), and parents may have difficulty applying concepts to their own situations. Thus, there is a need for brief, individualized approaches that can adapt to families' needs.

Second, most parenting interventions focus on very young children or adolescents, with fewer intervention options for 8–12 year old children. Within this age range, emotional, behavioral, and academic concerns may emerge; 14.5% of parents express concerns about their child's emotional/behavioral problems to a healthcare provider (National Center for Health Statistics 2011). Expectations for greater responsibility and self-regulation in children (Collins et al. 2002) can result in increased conflict at home. Finally, many interventions focus on one specific disorder (e.g., conduct; depression) rather than concerns of parents that cut across disorders and that cause distress and conflict and have the potential to escalate.

To address these gaps, and to provide a theory-based intervention involving the parenting dimensions outlined by SDT, the Parent-Check-In, a brief individualized intervention for parents of children ages 8–12, was developed with the goal of increasing parents' sense of efficacy, facilitative parenting, and children's self-regulation and adjustment. A randomized controlled trial (RCT) of this intervention is examined in this study.

SDT Interventions

There is some laboratory evidence that parents' autonomy supportive versus controlling behavior can be changed. In particular, experimental manipulations pressuring parents increase parents' controlling behavior (Grolnick et al. 2002; Wuyts et al. 2017). Despite evidence supporting an SDT parenting approach, only two parenting interventions have employed an SDT-based framework. Froiland (2011) found that an intervention to increase parents' use of autonomy supportive strategies during homework time increased parents' reports of students' autonomous motivation for learning and students' reports of positive affect during homework. Further, parents generalized these autonomy supportive strategies to non-school activities (Froiland 2015). Joussemet et al. (2014) developed the How-to Parenting Program, a 7-session group workshop consistent with SDT. The workshops increased parents' and children's reports of parental autonomy support, and children reported a greater sense of well-being following parents' participation. Preliminary results of an RCT (Joussemet and Mageau 2019) showed increases in parent-reported autonomy support and decreases in parent reports of children's externalizing behavior. The Parent Check-In adds to these interventions a brief, individualized approach directly connected to SDT.

Grounded in SDT, The Parent Check-In is a two session intervention that includes (1) a structured interview to understand parents' primary concerns and barriers to reaching their parenting goals, (2) psychoeducation focused on supporting children's needs for autonomy, competence, and relatedness, and (3) autonomy support, structure, and involvement strategies tailored to parents' unique situations and needs. The intervention was implemented in a manner consistent with Motivational Interviewing principles (Miller and Rollnick 2012) in that parents were asked about their strengths, goals and perceived barriers, and consultants expressed empathy and support, provided nonconfrontational feedback, and elicited "change talk" congruent with parents' goals and values. This supportive approach was expected to increase parents' sense of efficacy. A pilot study of the Parent Check-In, including 28 parents of children ages 8–12 (Allen et al. 2019), addressed its feasibility and preliminary effects using an intervention/waitlist control design. The intervention attracted parents with mild to moderate concerns about their children who were dealing with developmentally typical challenges, and parents reported a positive experience participating. Parents in the intervention group reported more autonomy-supportive behaviors and greater provision of structure two weeks post-intervention relative to the waitlist group. Results for parental sense of efficacy were not significant, though trends were in the direction of improvement, indicating the importance of testing these effects with a larger sample and a longer follow-up.

Moderators of Intervention Effectiveness

Although parenting interventions are the method of choice for preventing childhood problems, one quarter to one-third of families do not show improvement post intervention (Shelleby and Shaw 2014). Some studies suggest that the effects of parenting interventions may differ according to family socioeconomic status and severity of children's internalizing and externalizing problems (e.g., Shelleby and Shaw 2014) and thus, this study examined these factors as possible moderators of outcomes.

Internalizing and Externalizing Symptoms

Children with more severe symptomatology may have more scope for improvement but may be more difficult to change due to co-occurring problems (Leijten et al. 2018). Some

studies find that parenting interventions are more effective for children with more severe externalizing problems (Leijten et al. 2018; Lundahl et al. 2006; Shelleby and Shaw 2014), while others find they are less effective (e.g., Ruma et al. 1996).

There is scant literature exploring whether internalizing symptom severity moderates parent intervention effectiveness. Leijten et al. (2018) showed that children with more severe emotional (i.e., internalizing) problems decreased more in conduct problems as a result of the intervention. Due to these inconsistent findings, it is important to further investigate this factor.

Socioeconomic Disadvantage

Studies have considered the role of parental socioeconomic status (SES; e.g., income, education) in the effectiveness of parenting interventions. Given that lower SES families tend to have more risk factors for child problems (e.g., Bradley and Corwyn 2002), prevention is especially important for such families. However, the stressors associated with economic disadvantage may hinder families from benefiting from intervention (Leijten et al. 2018). Studies examining whether SES moderates intervention effectiveness have found mixed results. Some have found parenting interventions to be most effective with low-income families or less educated parents (Gardner et al. 2009), whereas others have shown that lower income and education are associated with lower intervention effectiveness (Lundahl et al. 2006). Still others have found SES to be unrelated to intervention effectiveness (Gardner et al. 2010, Leijten et al. 2017). Exploration of family SES may help to clarify its role in parent intervention effectiveness.

In sum, this study examined whether the Parent Check-In was effective in improving parental efficacy, parenting practices, and children's regulation of their behavior and symptoms in a community sample of parents of 8–12-year-old children. An exploratory aspect of the study was to determine whether the effects of the intervention varied by parent education or by the initial level of child internalizing and externalizing symptoms.

Method

Design

The study utilized a randomized controlled trial design whereby parents were randomly assigned to an intervention group or to a waitlist group that received the intervention later (see Fig. 1). Participants were recruited through flyers describing the intervention and research distributed in local schools, community organizations, and postings within the community. To be eligible for the study, participants had to have a child between the ages of 8 and 12. Participants were excluded if the child (1) was receiving mental health services, or (2) had a serious mental illness (e.g., schizophrenia, bipolar disorder, or concern of suicidality).

Participants

One-hundred and six parents contacted the team and were screened for eligibility to participate. Of these families, 93 were eligible and 13 were ineligible. Of the 93 parents sent initial pre-test questionnaires, 61 returned them and were assigned randomly to the intervention or waitlist group. Of these, two did not ultimately participate and data from two others could not be used—one due to child disability and the other to missing data on the pre-test. When relevant, parents were given the choice to participate alone or together as a couple.

Participants were thus 57 parents (31 intervention, 26 waitlist; 54 mothers, 3 fathers, 5 participating as couples) with at least one child between the ages of 8 and 12. Target children included 23 (40.4%) boys and 34 (59.6%) girls with a mean age of 9.88 years (SD = 1.32). With regard to race/ethnicity, 52% of parents self-identified as European American, 21.1% as Latinx, 15.8% as African American, 8.8% as Asian, and 1.8% as other. Participants varied in education with 10.5% completing high school/GED, 19.3% some college, technical or vocational training beyond high school, 33.3% had a college degree, and 36.8% had an advanced degree. With regard to relationship status, 50.9% were married, 22.8% were divorced or separated, 8% were in a committed relationship, and 12.3% were never married.

Procedure

After consenting to participate, participants were sent a packet of questionnaires (pre-test) and a stamped, addressed envelope to return the packets. When the packet was returned, participants were randomly assigned to either the intervention or waitlist group based on a random number generator applied prior to the start of the study. Children were then scheduled to complete questionnaires either over the phone, in the lab, or at their homes, according to preference. Parents were then contacted and informed of their group assignment. Parents in the intervention group were scheduled to attend their first 1½ h session, and parents in the waitlist group were informed that they would receive the Check-In in ~6 months, during which time they would complete additional questionnaires. Immediately after the first Check-In session, participants in the intervention group completed the SDT Concepts and Strategies Questionnaire to assess their knowledge of SDT concepts. The second Check-In session, also lasting about 1½ h, was scheduled

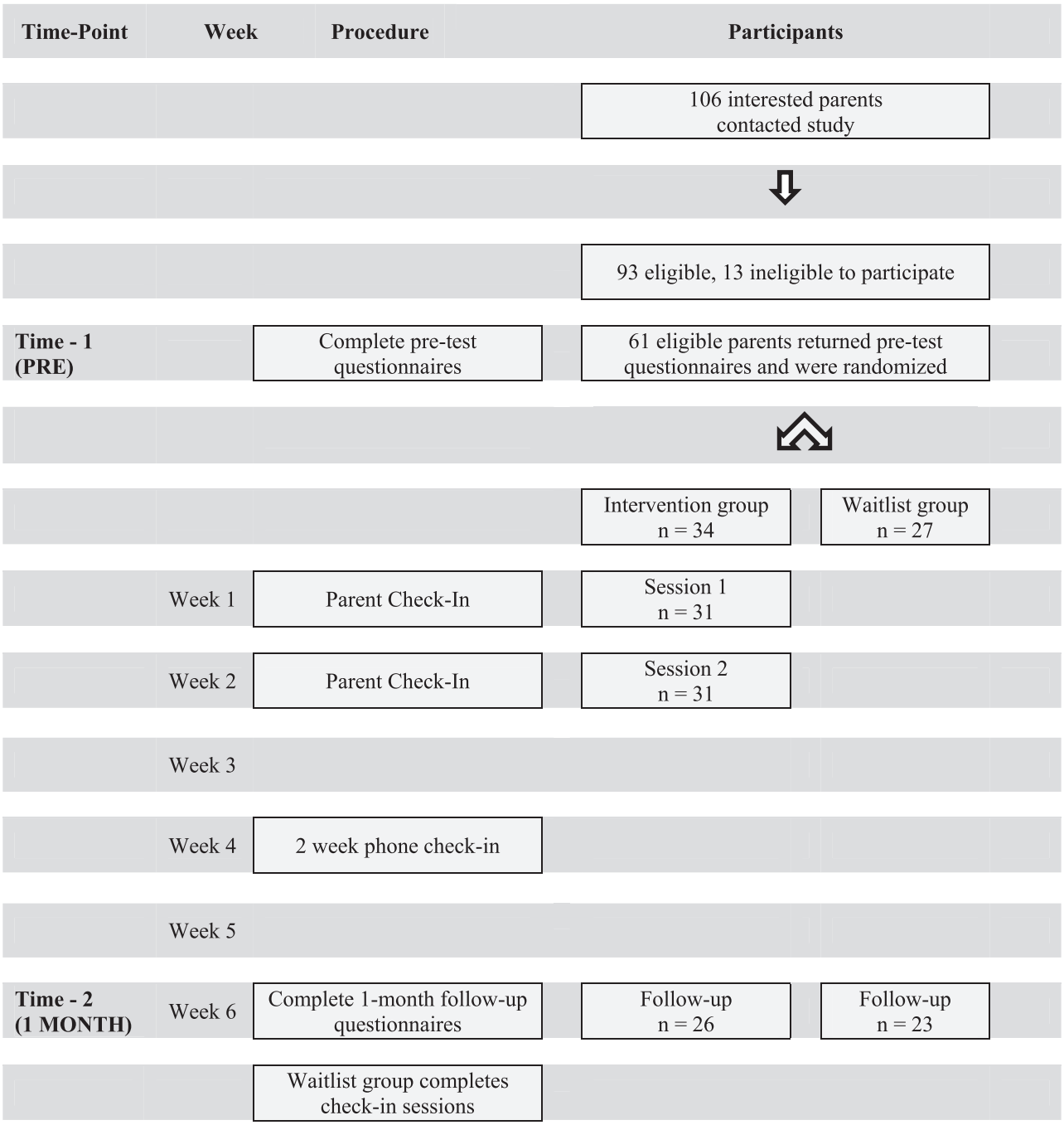

Fig. 1 Timeline of Study Procedures

1–2 weeks following the first session ($M = 13.74$ days). Two weeks following the second Check-In session, the consultant called the participant to discuss how the strategies discussed in the Check-In were working, whether they had any questions, and whether there were ongoing issues requiring further refinement of strategies. One month post intervention, participants received a second packet of questionnaires that included all of the pre-test measures except the demographics. After receiving the parents' questionnaires, children were scheduled to complete one-month follow-up questionnaires, which were the same as the measures given at pre-test.

Waitlist participants were yoked to intervention participants for timing of questionnaire administration, such that each waitlist participant received the one-month packet at the same time as one of the intervention participants (~4–5 weeks from the completion of pre-test measures). When waitlist participants received the Parent Check-In,

they completed the SDT Concepts and Strategies questionnaire at the start of the first session, before any SDT information was provided. This served as a comparison to the intervention group, which received the questionnaire after the first Check-In session.

All participants who completed the first Check-In session attended the second. Five intervention and 4 waitlist participants did not complete the one-month questionnaires. Thus, the sample with complete data was 26 intervention and 23 waitlist participants. Parents received $25 for completing the pre-test packet and $25 for completing the one-month packet, and children received $5 gift cards for completing their questionnaires.

To determine the sample size required to conduct repeated measures ANOVAs, we performed an a priori power analysis using G*Power 3 (Faul et al. 2007). A sample of 52 participants was necessary to detect a small effect size of 0.2 with power = 0.80, two-tailed, and alpha = 0.05. Thus, our sample of 57 was sufficient.

Intervention Protocol

Four trained study consultants conducted the Parent Check-In: a licensed clinical psychologist and three graduate students in clinical psychology. The consultants followed the protocol in an intervention manual. In keeping with SDT and the related technique, Motivational Interviewing (Miller and Rollnick 2012), consultants delivered the intervention using a style including autonomy support (e.g., understanding participants' perspectives, supporting their active problem solving, offering choices), structure (e.g., clarifying expectations of the intervention, presenting clear information) and involvement (e.g., warmth and positivity).

Session one began with a structured interview to assess parenting strengths, weaknesses, and challenges, and issues the parents wished to address in the Check-In. Next, the consultant provided psychoeducation about SDT principles in relation to parenting. In particular, they provided information about children's needs for autonomy, competence, and relatedness and contexts supporting these needs (autonomy support, structure, and involvement, respectively). Handouts were used. The psychoeducation included an experiential component in which parents considered situations in which their own needs were or were not satisfied (e.g., by partners, friends, bosses, etc.) and how they felt. This was used to help parents reflect on how their child may feel when they use non-need-fulfilling practices (e.g., demanding compliance, providing vague expectations). Finally, parents were given a worksheet to complete for the next session which involved situations in which their child experienced autonomy, competence, and connection. This exercise, which was discussed in the second session, was designed to facilitate perspective-taking and to reinforce SDT concepts.

At the start of session two, consultants discussed the perspective taking exercise completed between sessions. They then presented a brief feedback report summarizing the interview and questionnaire results. The report described parents' goals for their children, strengths and areas of growth, and their achievements and challenges in the areas of autonomy support, structure, and involvement. Consultants framed areas of challenge as "patterns" (Cordova 2009) in which parents and children get "stuck" (e.g., pressures and control lead to push-back and power struggles), emphasizing contextual challenges (e.g., stress, lack of time), and empathizing with the parent's experience. The consultant then introduced strategies the parents could use to provide autonomy support (e.g., take child's perspective, express empathy, provide choice, use non-controlling language), structure (e.g., provide clear expectations and consequences), and involvement (e.g., spend time together, show affection, introduce family routines). The consultant then collaborated with the parent to apply the strategies to their specific situations and practiced using the strategies by engaging in role plays. Finally, parents wrote down their parenting goals moving forward using the techniques on a goals worksheet.

To ensure that the intervention was conducted according to the specified protocol, the senior investigator reviewed a random half of the audiotapes of the sessions. Based on a checklist of required components, each of the reviewed tapes included the interview topics, psychoeducation elements, and homework outlined in the manual and were delivered in an SDT-consistent style. The senior investigator provided supervision to the consultants.

Measures

Parent completed measures

Demographics On pre-test questionnaires, parents reported on family demographics (education level, race/ethnicity, child gender, marital status, annual income), children's problem behavior/treatment history, and their previous help-seeking related to parenting.

Parenting issues The Parenting Issues Checklist (Prinz et al. 1979) lists 27 issues with which parents tend to struggle with their children (e.g., doing homework, helping around the house). At pre-test, parents indicated which issues have surfaced in the past month and which they wanted to discuss during their Check-In.

Parent autonomy support, structure, and involvement The Parents as Social Context Questionnaire (PASCQ; Skinner et al. 2005) measures six features of

parenting: Autonomy Support (e.g., "I encourage my child to express his feelings even when they're hard to hear"); Coercion (i.e., control; e.g., "I can't afford to let my child decide too many things on his own"); Structure (e.g., "I make it clear what will happen if my child does not follow our rules"); Chaos (e.g., "I let my child get away with things I really shouldn't allow"); Warmth (e.g., "I know a lot about what goes on for my child"); and Rejection (e.g., "I don't understand my child very well"). Parents rated 30 items on a 4-point scale ranging from *not true at all* to *very true*. The authors report good reliability for the six subscales ($\alpha =$ 0.61–0.82). The conceptually opposite subscales of warmth-rejection, structure-chaos, and autonomy support-coercion were aggregated following Skinner et al. (2005) to create measures of warmth, structure, and autonomy support, respectively.

Parents also completed the 30-item parent-report version of the Children's Report on Parent Behavior Inventory (CRPBI; Schludermann and Schludermann 1988). Items are rated 1 (*not at all like*), 2 (*somewhat like*) or 3 (*a lot like*) them. Subscales were Acceptance (e.g., "I'm able to make my child feel better when he/she is upset"), Firm Control (e.g., "I believe in having a lot of rules and sticking to them,") and Psychological Control. Based on Levitt et al. (2020) and De Meyer et al. (2016), the Psychological Control scale was further divided into items tapping external control (e.g., "I insist that my child does exactly what he/she is told") and internal control (e.g., "I tell my child if he/she loved me, he/she would do what I want him/her to do"). The CRPBI subscales show good psychometric properties (Alderfer et al. 2008).

Parental efficacy Using the 7-item Parenting Efficacy subscale from the Parenting Sense of Competence Scale (PSOC; Gibaud-Wallston and Wandersman 1978; Johnston and Mash 1989), parents rated their efficacy in the parenting role (e.g., "If anyone can find the answer to what is troubling my child, I am the one"). Parents rated items on 6-point scales ranging from *strongly agree* to *strongly disagree*. Internal consistency has been adequate (0.68–0.76) in previous research (Gilmore and Cuskelly 2009).

Child symptoms Parents completed the Aggression, Conduct, Depression, and Anxiety subscales from the Behavior Assessment System for Children, 2nd Edition (BASC-2; Reynolds and Kamphaus 2004). Parents rated the frequency of 11 aggressive behaviors (e.g., hits other children), 9 conduct behaviors (e.g., gets into trouble), 14 symptoms of anxiety (e.g., worries about what other children think), and 14 symptoms of depression (e.g., is sad) on 4-point scales ranging from *never* to *almost always*. These BASC-2 subscales have good reliability and validity (Reynolds and Kamphaus 2004).

SDT concepts and strategies A 10-item multiple choice test of SDT concepts and strategies assessed parents' comprehension and recall of psychoeducational materials and served as a manipulation check.

Satisfaction Following the intervention, parents completed a satisfaction questionnaire. Ten items rated on 5-point scales (*strongly disagree* to *strongly agree*) measured appreciation of the intervention, perceived effectiveness, and perceived consultant expertise and communication style.

Child completed measures

Parental autonomy support Parental autonomy support versus control was assessed with a measure utilized by Marbell-Pierre et al. (2019) with items tapping into four components: Perspective Taking (e.g., "My mother cares about how I feel and what I think"), Allowance of Choice (e.g., "My mother allows me to make choices whenever possible"), Decision-Making (e.g., "My mother allows me to decide things for myself"), and Opinion Exchange (e.g., "My mother encourages me to give my ideas and opinions when it comes to decisions about me"). Reliability of similar autonomy support subscales have been in the 0.70–0.80 range (e.g., Marbell-Pierre et al. 2019). Subscales were combined to form an aggregate scale.

Parental controllingness The extent to which parents were controlling was assessed using the Controllingness subscale of the Parenting Context Questionnaire (PCQ; Wellborn and Grolnick 1988) and the Coercion subscale of the Parents as Social Context Questionnaire (PASCQ; Skinner et al. 2005). The PCQ Controllingness subscale consists of five items (e.g., "My mother tries to control everything I do"), and the PASCQ Coercion subscale consists of four items (e.g., "My mother bosses me"). Responses for both scales are coded on a 4-point scale from 1 (*not true at all*) to 4 (*very true*). Items were averaged into a single score.

Parental involvement Parental involvement was measured using 8 items from the Involvement subscale from the PCQ (e.g., "My mother knows what I am doing in school," "My mother spends time with me whenever she can"). Responses were coded on a 4-point scale ranging from 1 (*not true at all*) to 4 (*very true*).

Parental provision of structure The Parental Structure Questionnaire (Flamm and Grolnick 2013) includes 11 items measuring three aspects of structure: clear rules and expectations (e.g., "My mother makes it clear what she expects of me"), predictable consequences (e.g., "When I get in trouble, I never know how my mother will act") and rationales for rules and expectations (e.g., "My mother

explains the reasons for our family rules"). Children rated items on a 4-point scale (from *not true at all* to *very true*).

Children also completed the 30-item Children's Report on Parent Behavior Inventory (CRPBI; Schludermann and Schludermann 1988), which includes Acceptance (e.g., "cheers me up when I am sad"), Firm Control (e.g., "believes in having a lot of rules and sticking to them"), and Psychological Control. As with the parent-reported CRPBI, psychological control was divided into external control (e.g., "My mother is always telling me how I should behave") and internal control (e.g., "My mother says if I love her I would do what she wants me to do"). Items were rated on a 3-point scale (1 = *not like*, 2 = *somewhat like*, 3 = a *lot like*).

Depression Children completed the Child Depression Inventory-2-Short Form (CDI-2; Kovacs 2010). Ten items present three statements from which children select that most representative of how they have been feeling over the past 2 weeks, with statements increasing in levels of depression (e.g., "I am sad once in a while," "I am sad many times," "I am sad all the time"). The CDI-2-Short Form, adapted from the 27-item original, has been shown to have good internal consistency (Caqueo-Urízar et al. 2014).

Anxiety The Revised Children's Manifest Anxiety Scale: Second Edition (RCMAS-2– Short Form; Reynolds and Richmond 2008) consists of 10 items measuring children's anxiety in the past week. Children respond to items (e.g., "I often worry about something bad happening to me," "I am nervous") using a yes/no format. Scale reliabilities are in the 0.70–0.80 range (Reynolds and Richmond 2008).

Behavior problems Children completed the Child Hostility Scale (Cook 1986) on which they rate their engagement in 22 externalizing behaviors (e.g., "You argue a lot," "You disobey at school") on a 3-point scale from *not true* to *often true*. Cook (1986) reports good internal consistency (alpha = 0.85) for the scale.

Self-regulation Using the Self-Regulation Questionnaire (Ryan and Connell 1989), the degree to which children autonomously regulate their behavior in two domains, school and home responsibilities, was assessed. Children report on reasons why they engage in four behaviors in the school domain (doing homework, doing classwork, answering hard questions in class, and trying to do well in school) as well as why they complete responsibilities at home. Three subscales varying in levels of autonomy from low to high were included: External (e.g., "Because I'd get in trouble if I didn't"), Introjected (e.g., "Because I'd feel ashamed if I didn't"), and Identified (e.g., "Because doing school work is important to me"). Intrinsic items were not included as they were not applicable to responsibilities. Children rate how true each reason is from 1 (*not true at all*) to 4 (*very true*). Items are averaged to form summary scores, each with possible ranges from 1 to 4. Consistent with other studies (Sheldon and Elliot 1998) and their high correlations (>0.42, $p < 0.001$), external and introjected subscales were combined to form controlled motivation. The academic (e.g., Ryan and Connell 1989; Grolnick and Ryan 1989) and responsibilities (Grolnick et al. 2014) subscales have shown good reliability.

Results

Data Analysis Overview

We first ran descriptive statistics to determine the frequency of participants' concerns and previous help-seeking methods. Next, we ran chi-square tests and *t*-tests to determine whether there were demographic or pre-test questionnaire differences between the intervention and waitlist groups. We then compared the intervention and waitlist groups on the measure of SDT concepts, after the intervention group received the intervention and before the waitlist group received the intervention. To examine whether the intervention affected parents' efficacy, parenting, and children's symptoms and self-regulation, we conducted a series of repeated measures ANOVAs with treatment (intervention vs. waitlist) as the grouping variable and pre-test and one-month outcomes as the repeated factor. Finally, we conducted exploratory repeated measures ANOVAs to determine whether parental education and child symptoms moderated the effects of the intervention.

Participants' Concerns and Prior Help-Seeking

Of the 57 participants, 8 (14%) reported concerns about their child's mental health and 17 (29.8%) reported teacher concerns about their child. Five families reported a prior history of treatment for the child. With regard to other previous help-seeking, 29 parents (52.7%) had read parenting books, 13 (23.6%) had attended parenting workshops, 23 (41.8%) had consulted their pediatricians, and 45 (80.4%) had sought advice from family or friends. A little over half of participants (54.5%) reported that this was their first time seeking formal help/information regarding their parenting.

Pre-intervention, on the BASC-II, six parents rated their children as displaying behavior problems (aggression, conduct problems) in the clinical range and 21 in the borderline range. On the Parenting Issues Checklist, parents reported a mean of 10.44 (SD = 4.49; range = 0–27) issues that had come up in their homes in the past month.

Table 1 Means, standard deviations, and reliabilities of parent-completed study measures at pre-test

Parent completed	*M*	SD	Possible range	Alpha pre-test	Follow-up
Parenting issues	10.44	4.49	0–27	–	–
PASQ					
Warmth/Rejection	3.36	0.34	1–4	0.69	0.70
Structure/Chaos	3.41	0.35	1–4	0.72	0.77
Autonomy support/control	3.25	0.37	1–4	0.75	0.74
CRPBI					
Acceptance	2.74	0.24	1–3	0.75	0.78
Firm control	2.24	0.30	1–3	0.67	0.71
Psychological Control—external	1.37	0.34	1–3	0.66	0.76
Psychological Control—internal	1.29	0.26	1–3	0.67	0.71
Parental efficacy	4.07	0.78	1–6	0.80	0.86
BASC II					
Aggression	0.48	0.30	0–3	0.77	0.81
Conduct	0.43	0.26	0–3	0.73	0.75
Depression	0.45	0.42	0–3	0.89	0.91
Anxiety	0.76	0.55	0–3	0.93	0.90

Table 2 Means, standard deviations, and reliabilities of child-completed study measures at pre-test

Child completed	*M*	SD	Possible range	Alpha pre-test	Follow-up
Parent involvement	3.66	0.32	1–4	0.67	0.79
Parent autonomy support	3.42	0.37	1–4	0.80	0.88
Parent structure	3.15	0.37	1–4	0.60	0.65
CRPBI					
Acceptance	2.71	0.33	1–3	0.85	0.86
Firm control	1.96	0.31	1–3	0.66	0.71
Psychological Control—external	1.56	0.45	1–3	0.68	0.80
Psychological Control—internal	1.44	0.32	1–3	0.72	0.82
Hostility	1.36	0.24	1–	0.78	0.78
CDI	1.18	0.21	1–3	0.67	0.72
RCMAS	0.24	0.25	0–1	0.77	0.74
Self-regulation—school					
Controlled motivation	2.93	0.57	1–4	0.83	0.87
Identified motivation	3.68	0.46	1–4	0.71	0.83
Self-Regulation—responsibilities					
Controlled motivation	2.92	0.62	1–4	0.79	0.90
Identified motivation	3.58	0.44	1–4	0.71	0.83

The most common issues were: cleaning room (45), helping around the house (41), talking back or arguing (34), and using computer and other electronics (34).

Preliminary Analyses

Descriptive statistics and reliabilities for measures are presented in Tables 1 (parent report) and 2 (child report). Parent reports of warmth, structure, and autonomy support were all above the median of the scales. Parents rated relatively low levels of child symptoms, though there was variability. Children also rated parents relatively positively and their own symptoms relatively low. The mean intervention satisfaction rating was 4.51 (SD = 0.44; range 1–5), indicating high satisfaction. Please see Supplementary Material (Appendix A, Tables A1 and A2) for correlations among all variables.

To determine whether participants were effectively randomized, chi-squares for nominal variables and *t*-tests for

continuous variables by condition were conducted. Intervention and waitlist groups did not differ by child gender, χ^2 (1) = 0.65, $p = 0.42$, race/ethnicity, χ^2 (4) = 2.25, $p = 0.69$, parent education, χ^2 (4) = 1.25, $p = 0.87$, marital status, χ^2 (4) = 5.81, $p = 0.21$, or household income, t (55) = 0.77, $p = 0.45$. The two groups differed significantly on only one of the pre-test questionnaire variables. Children in the intervention group rated their parents as higher on CRPBI firm control ($M = 2.07$, SD = 0.37) relative to those in the waitlist group ($M = 1.85$, SD = 0.20; t (55) = 2.09, $p < 0.05$). Given that there were 26 variables, this difference was likely due to chance.

To determine whether the psychoeducation about SDT was delivered successfully, an ANOVA with group as the independent variable was conducted. The result showed a significant difference, F (1,52) = 17.55, $p = 0.001$, between the intervention group ($M = 8.68$, SE = 0.29) and the waitlist group ($M = 6.53$, SE = 0.42). Thus, the intervention group increased their knowledge of SDT principles as a result of the intervention.

There were no significant correlations between parents' highest level of education or household income and any of the pre-test variables. For race/ethnicity, due to small N's, African American, Hispanic/Latinx, and Asian participants were combined and compared with European American participants. European American parents rated their children as higher in depression, $M = 0.60$, SD = 0.49, $t(55) = 2.96$, $p = 0.005$, relative to other groups ($M = 0.29$, SD = 0.24). Children of European American families rated their parent as less involved, $M = 3.44$, SD = 0.33, $t(55) = -2.82$, $p = 0.007$, than those in other groups ($M = 3.78$, SD = 0.33). There were two differences by child gender; mothers reported providing more external control on the CRPBI, $t(53) = 2.31$, $p = 0.025$, to boys ($M = 1.49$, SD = 0.43) than to girls ($M = 1.28$, SD = 0.28). Girls ($M = 3.81$, SD = 0.33) reported more identified regulation of school behavior on the SRQ than boys ($M = 3.49$, SD = 0.55), $t(55) = -2.75$, $p = 0.008$. We checked to see whether gender moderated the effects of the intervention and found no significant interactions.

Primary Analyses

Tables 3 and 4 present results of the repeated measures ANOVAs comparing the intervention group with the waitlist group on change from pre-test to follow-up. Effect sizes (partial eta or η_p^2) can be interpreted as small = 0.01, medium = 0.09, and large = 0.25. For parent-reported parenting variables, there was one condition effect, that for acceptance. There was also a time × condition effect for external control, with the intervention group decreasing and the waitlist group increasing (see Table 5). There were both time and time × condition effects for parental efficacy, with efficacy increasing only in the intervention group. Finally, for child symptoms, there were significant time effects for aggression and conduct problems, and marginally significant effects for depression and anxiety, with each decreasing over time for both groups.

For child-reported parenting, there was a time × condition effect for parental autonomy support, with children's ratings increasing for the intervention group and staying stable for the waitlist group (see Table 6). There was a significant time × condition effect for firm control, with values decreasing for the intervention group and increasing in the waitlist group. The marginally significant effect for external control showed a decrease for the intervention group and stable scores for the waitlist group. For child symptoms, there was one effect- ratings of child hostility decreased for the intervention group and remained stable for the waitlist group. Finally, for self-regulation, there was a marginally significant effect for identified self-regulation
in the responsibilities domain; the intervention group increased while the waitlist group was relatively stable.

Exploratory Analyses—Moderators of Intervention Effects

To determine whether effects of the intervention varied by parents' highest level of education or child symptoms at pre-test, we conducted repeated measures ANOVAs. Parent education was divided into low (high school graduate, some college) and high (college graduate or above) groups. Summary scores for child-reported internalizing symptoms were created by averaging depression and anxiety and splitting scores at the mean. A summary score for parent-reported externalizing symptoms was created by averaging aggression and conduct problems and splitting scores at the mean. Since there was only one scale for externalizing symptoms completed by children and one for internalizing completed by parents, these scales were split at the mean.

For parent education, there were three significant three-way (group × time × education) interactions (see Supplementary Material, Appendix B, Figs. B1, B2, and B3). For child reports of parental structure, F (1,44) = 4.80, $p = 0.034$, for the intervention group the low education group increased (2.98–3.34) while the high education group was stable (3.18–3.17). For the waitlist group, the low education group decreased (3.36–3.14), while the high education group was relatively stable (3.08–3.15). The interaction for child ratings of hostility, F (1,44) = 7.08, $p = 0.01$, showed that hostility decreased more for the low education group (1.50–1.22) relative to the high education group (1.43–1.36). Both the low (1.26–1.33) and high education (1.27–1.24) waitlist groups were relatively stable. Finally,

Table 3 Repeated measures ANOVA's comparing intervention and waitlist groups on degree of change from pre-test to follow-up—parent-reported outcomes

	Time			Condition			Time × Condition		
	F	*p*	η_p^2	*F*	*p*	η_p^2	*F*	*p*	η_p^2
Parent report									
PASQ									
Warmth/rejection	2.47	0.12	0.024	0.71	0.41	0.019	2.16	0.15	0.020
Structure/chaos	3.48	0.07	0.070	0.42	0.52	0.009	0.27	0.61	0.006
Autonomy/control	1.60	0.21	0.007	0.06	0.81	0.001	1.19	0.28	0.004
CRPBI									
Acceptance	0.09	0.77	0.002	4.24	0.05	0.090	1.22	0.28	0.028
Firm control	0.04	0.85	0.001	0.85	0.36	0.019	1.27	0.27	0.029
Psychological control—internal	0.49	0.49	0.011	0.14	0.72	0.003	0.15	0.70	0.003
Psychological control—external	0.02	0.90	0.001	0.007	0.94	0.001	5.35	0.03	0.073
Parental efficacy	9.74	0.003	0.175	0.002	0.96	0.000	14.54	0.001	0.240
BASC II									
Aggression	5.28	0.03	0.103	2.48	0.12	0.051	0.15	0.71	0.003
Conduct	8.97	0.004	0.163	2.18	0.15	0.045	1.23	0.27	0.026
Depression	3.41	0.07	0.069	0.97	0.33	0.021	0.40	0.53	0.009
Anxiety	3.65	0.06	0.073	1.01	0.32	0.021	0.10	0.76	0.002

Table 4 Repeated measures ANOVA's comparing intervention and waitlist groups on degree of change from pre-test to follow-up—child-reported outcomes

	Time			Condition			Time × Condition		
	F	*p*	η_p^2	*F*	*p*	η_p^2	*F*	*p*	η_p^2
Child Report									
Involvement	0.23	0.63	0.005	0.86	0.36	0.019	1.74	0.19	0.038
Autonomy support	0.40	0.53	0.009	0.001	0.98	0.000	4.09	0.05	0.085
Control	2.95	0.09	0.063	1.78	0.19	0.039	1.02	0.32	0.023
Structure	0.07	0.79	0.002	0.03	0.87	0.001	0.26	0.62	0.006
CRPBI									
Acceptance	0.34	0.56	0.008	0.02	0.88	0.001	0.82	0.37	0.018
Firm control	0.46	0.50	0.010	1.21	0.28	0.027	17.24	0.001	0.281
Psychological control—internal	0.18	0.67	0.004	0.21	0.65	0.005	0.02	0.90	0.000
Psychological control—external	1.67	0.20	0.037	0.52	0.48	0.012	3.58	0.06	0.075
Hostility	4.63	0.04	0.095	4.14	0.05	0.086	4.63	0.04	0.095
Depression	1.80	0.19	0.039	0.45	0.51	0.010	0.02	0.91	0.000
Anxiety	15.97	0.001	0.266	0.02	0.89	0.000	0.40	0.53	0.009
Self-Regulation—school									
Controlled motivation	0.06	0.80	0.001	0.04	0.85	0.001	0.11	0.75	0.002
Identified motivation	0.02	0.88	0.001	1.59	0.22	0.035	2.35	0.13	0.051
Self-Regulation—responsibilities									
Controlled motivation	0.50	0.48	0.011	0.01	0.93	0.000	0.67	0.42	0.015
Identified motivation	1.58	0.21	0.035	0.01	0.92	0.000	3.62	0.06	0.076

the three-way interaction for child depression, $F\ (1,44) = 9.38$, $p = 0.004$, showed the same pattern, with the low education group decreasing (1.28–1.02) and the high education group remaining stable (1.19–1.20). The low and high education waitlist groups were also relatively stable (1.03–1.07 and 1.23–1.15, respectively).

Table 5 Mean scores for intervention and waitlist groups on study measures at pre-test and follow-up—parent report

	Intervention				Waitlist			
	Pre-test		Follow-up		Pre-test		Follow-up	
	M	SD	*M*	SD	*M*	SD	*M*	SD
PASQ								
Warmth/rejection	3.32	0.36	3.46	0.33	3.31	0.30	3.32	0.41
Structure/chaos	3.46	0.32	3.52	0.33	3.38	0.41	3.48	0.38
Autonomy/control	3.24	0.35	3.35	0.40	3.26	0.42	3.27	0.36
CRPBI								
Acceptance	2.65	0.22	2.68	0.25	2.82	0.24	2.78	0.26
Firm control	2.18	0.32	2.21	0.23	2.29	0.28	2.26	0.34
Psychological control—internal	1.28	0.23	1.24	0.24	1.29	0.30	1.27	0.29
Psychological control—external	1.40	0.35	1.30	0.32	1.28	0.30	1.36	0.32
Parenting efficacy	3.97	0.62	4.59	0.72	4.32	0.75	4.26	0.63
BASC II								
Aggression	0.42	0.28	0.37	0.24	0.55	0.31	0.48	0.34
Conduct	0.35	0.26	0.29	0.24	0.49	0.27	0.35	0.30
Depression	0.41	0.36	0.36	0.35	0.54	0.49	0.45	0.44
Anxiety	0.69	0.54	0.60	0.90	0.84	0.61	0.72	0.49

There were no significant interactions for internalizing or externalizing child symptoms as reported by parents and no interactions for externalizing symptoms reported by children. However, children's reports of internalizing symptoms marginally significantly moderated the effects of the intervention on parents' reports of warmth/rejection, $F\ (1,44) = 3.37,\ p = 0.07$, and significantly moderated parents' reports of autonomy support/coercion, $F\ (1,44) = 4.77,\ p = 0.03$, and children's reports of parents' autonomy support, $F\ (1,44) = 4.64,\ p = 0.037$ (See Supplementary Material, Appendix B, Fig. B4). Warmth/rejection increased for the high but not the low internalizing group. For parent reported autonomy support/coercion, a similar pattern emerged with autonomy support increasing for the higher internalizing group (3.23–3.47) but not the lower (3.28–3.23), and the high and low internalizing waitlist groups staying stable (see Supplementary Material, Appendix B, Fig. B4). Children's reports of autonomy support increased more for the low internalizing group (3.38–3.57) than the high internalizing group (3.34–3.32) (see Supplementary Material, Appendix B, Fig. B5).

Discussion

This study examined the effectiveness of the Parent Check-In in facilitating adaptive parenting, increasing children's self-regulation, and decreasing child symptomatology. The results showed some effects of the Check-In on adaptive parenting, though these were apparent for some dimensions (i.e., autonomy support) more than others. Further, there was some evidence that the effects were stronger for families with lower education levels and those with higher child internalizing symptoms at baseline.

First, with regard to the sample, our intervention attracted families with some concerns about their children's behavioral or emotional functioning, though most not in the clinical range. Still, the parents noted on average over 10 issues with their children that had surfaced in the past month. Most parents had not sought formal help in the past. Thus, the intervention attracted parents who were experiencing some common yet distressing parenting challenges and might be responsive to a brief intervention.

The intervention had a strong effect on parental reports of efficacy. This indicates that parents learning motivationally facilitative strategies helps them feel more effective in their parenting overall. As parenting efficacy has been related to positive outcomes in children, this is a compelling finding.

Effects of the intervention on parenting were most apparent for autonomy support versus controllingness. Parents who received the intervention and their children reported parents using less external control (e.g., yelling/demanding) and children reported higher parent autonomy support at one-month follow-up relative to those in the waitlist group. The stronger effects for autonomy support versus controllingness are consistent with the emphasis of the intervention, and with the dimension with which parents reported struggling the most. The experiential focus of the intervention, whereby parents were encouraged to recall experiences when they felt coerced or controlled, may have helped them to appreciate the need for autonomy support and to try out suggested strategies including taking children's perspectives, providing empathy, and introducing choice. The concept of autonomy support was new to many parents and many were eager to try the strategies. Given that autonomy support is associated with many positive outcomes and that most parenting interventions do not address it, the results encourage a focus on this parenting dimension in preventive interventions.

In contrast to external control, there were no intervention effects for parents' use of internal control (e.g., inducing guilt). Given that the Parent Check-In focused on increasing autonomy supportive strategies and decreasing more overtly controlling behaviors (e.g., yelling, using controlling language), it makes sense that these externally controlling behaviors decreased more post intervention. It is also possible that the more internally controlling behaviors are more subtle and less easily recognized by parents and children.

Interestingly, children of the parents in the intervention group reported decreased firm control relative to the waitlist group. In understanding this, we note that the CRPBI firm control items include aspects of controllingness and structure (e.g., the word "strict"). It is possible that children

Table 6 Mean scores for intervention and waitlist groups on study measures at pre-test and follow-up—child report

	Intervention				Waitlist			
	Pre-test		Follow-up		Pre-test		Follow-up	
	M	SD	*M*	SD	*M*	SD	*M*	SD
Parent involvement	3.66	0.37	3.72	0.32	3.16	0.30	3.59	0.37
Parent autonomy support	3.37	0.37	3.48	0.39	3.45	0.41	3.39	0.50
Parent control	2.54	0.68	2.33	0.63	2.24	0.64	2.19	0.47
Parent structure	3.15	0.41	3.20	0.33	3.17	0.38	3.15	0.38
CRPBI								
Acceptance	2.70	0.31	2.72	0.33	2.76	0.26	2.68	0.38
Firm control	2.07	0.37	1.94	0.35	1.85	0.20	2.03	0.32
Psychological control—internal	1.40	0.35	1.43	0.42	1.45	0.29	1.46	0.37
Psychological control—external	1.65	0.54	1.46	0.42	1.45	0.40	1.48	0.54
Hostility	1.45	0.24	1.34	0.21	1.27	0.23	1.27	0.24
Depression	1.20	0.22	1.17	0.20	1.17	0.20	1.13	0.19
Anxiety	0.25	0.22	0.15	0.18	0.25	0.29	0.16	0.23
Self-Regulation—school								
Controlled motivation	2.97	0.64	2.94	0.70	2.92	0.50	2.92	0.63
Identified motivation	3.56	0.51	3.65	0.40	3.81	0.38	3.71	0.58
Self-Regulation—responsibilities								
Controlled motivation	2.97	0.67	2.96	0.72	2.89	0.62	3.01	0.67
Identified motivation	3.50	0.46	3.67	0.38	3.61	0.30	3.58	0.59

focused on the more controlling elements. Given that the firm control subscale mixes control and structure, it should be used with caution.

Despite these promising effects, there were no intervention effects on several parenting variables, including parents' reports of warmth/rejection, acceptance, structure, and firm control. Researchers have argued that child reports of parenting are better measures of parenting than are parents' reports given that they are not subject to self-presentation, relate more strongly to observations of interaction (Gonzalez et al. 1996), and are more predictive of child outcomes (Barber et al. 2005). Consistent with this presentation argument, the means of the parenting variables were high at pre-test with little leeway for change. Despite the lack of findings for parents' self-reported parenting, that our intervention showed child-reported parenting effects when the children did not participate in the intervention strengthens confidence in the findings.

The intervention did affect child symptomatology, but only as reported by children. In particular, children of parents in the intervention group decreased in reported hostility relative to those with parents in the waitlist group. It is possible that the increases in autonomy support and decreases in external control experienced by the children may have led to their being less reactive and more cooperative. This may also be the case for the finding that children in the intervention group reported completing their responsibilities around the house for more internalized (identified) reasons, although the result should be interpreted cautiously given that it was only marginally significant. That there was more of an effect for externalizing relative to internalizing symptoms is consistent with findings of other prevention programs (e.g., Heinrichs et al. 2017; Joussemet and Mageau 2019) and suggests that the parenting skills covered may most directly affect children's more overt problems.

Consistent with the results for parenting, the effects of the intervention on child symptomatology were more in evidence for child than parent reports. In fact, there were only time effects for the parent reports. Across groups, parents reported lower child aggression, conduct problems, and anxiety from baseline to one-month. It is possible that the optimism and motivation provided by participating in the study and completing questionnaires could have positively influenced all parents, though this was not the case for explicitly taught content and strategies such as autonomy support.

Exploratory analyses showed some evidence that the effects of the intervention were moderated by parent education. In particular, the intervention was especially effective in increasing parental structure and decreasing child symptomatology for parents with lower education. The results support studies showing stronger effects of preventive interventions for lower SES families

(e.g., Gardner et al. 2009) who may experience high levels of stress. Given that some interventions are less successful with parents with lower education, interventions like the Parent Check-In, which explicitly attend to client engagement, tailor interventions to client needs, and allow parents to determine their own goals, may be especially meet the needs of diverse parents.

There was also some evidence for moderation by initial child internalizing symptomatology. In particular, the intervention affected warmth and autonomy support more for parents of children higher in depression. Given that few studies have examined moderation by child internalizing symptoms, these results indicate a need for further exploration. It is possible that since the Parent Check-In targets a community rather than a clinical sample, many of the children's problematic behaviors were relatively minor and did not need to be reduced. Thus, it makes sense that greater effects were seen for parents of children with more symptoms. Alternatively, parents with children with more symptoms may be more motivated to change their behavior.

There were several limitations of the study. First, the sample was relatively small and some effects may have been significant with a larger sample. The sample also lacked diversity, affecting generalization. Second, the 1-month follow-up was relatively brief. Whether effects of the intervention maintain and/or increase over time awaits future studies. Third, though commonly used in evaluations of parenting interventions (Kaminski et al. 2008), there are pros and cons of a waitlist control. While such designs control for the passage of time and assessment, they may inflate effects relative to a no-treatment control since participants may feel they need to wait to improve (Cunningham et al. 2013). However, there were positive changes in some variables for both the waitlist and intervention groups, suggesting that this may not have been an issue. Waitlist designs also do not specify whether effects are due to specific ingredients in the intervention or common factors. Another possible issue was that parenting measures did not specify a time frame. If parents and children were thinking generally about parenting, effects may have been underestimated. Future studies might also consider additional moderators of effects, such as characteristics of parents or their contexts and mediators of effects (e.g., through parenting). Finally, most participants were mothers; effects might differ for fathers.

In sum, this study showed the promise of a brief intervention for parents of elementary-age children. It suggested that a brief intervention can increase parents' autonomy support and decrease controllingness, dimensions of parenting important for children's adjustment and achievement. Given its brevity, it has potential to be used as a preventive tool that could be incorporated into other settings (e.g., pediatricians' offices) to reach more families. Given its modest effects, the intervention might be strengthened by increasing the number of sessions and/or follow-up phone calls, giving parents further opportunity to problem solve and practice skills. In fact, several parents suggested increasing the number of sessions. Researchers might also consider adapting the intervention for particular populations (e.g., divorced parents). Future studies are needed to determine the long-term effectiveness of brief interventions and the processes through which change occur.

Funding Funding for this study was provided by a Clark University Faculty Grant to W.S.G.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethics Approval The study and all of its procedures and methods was approved by the Institutional Review Board of Clark University.

Informed Consent Parents provided written informed consent to participate.

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