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ORIGINAL PAPER

Evaluating a Self-Determination Theory-Based Preventive Parenting Consultation: The Parent Check-In

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Abstract

Objectives Parent training is the treatment of choice for many childhood problems; yet there are notable gaps among available treatments related to access, content, and target age-range. This study examined the feasibility and initial effects of the Parent Check-In, a two-session preventive intervention based on Self-Determination Theory. The intervention was designed to enhance parents' motivation and promote parenting skills on dimensions of autonomy support, structure, and involvement.

Methods Twenty-eight parents (27 mothers, 3 fathers, 2 participating as couples) of elementary school-age children (ages 8–12) participated in a pilot study with an intervention/waitlist control design.

Results Results revealed that the Parent Check-In attracted parents from a range of families in varying degrees of distress, including several first-time treatment-seekers. Relative to a waitlist control group (n = 8), participants who received the Parent Check-In (n = 20) showed significantly greater increases in parental internal locus of control, autonomy support, and structure provision at a two-week follow-up. Effect sizes were moderate to large. Both groups showed improvements in parent involvement. Intervention effects on parenting stress and sense of efficacy were not significant.

Conclusions Preliminary evidence supports the efficacy of the Parent Check-In. Future directions for the development and validation of the intervention are discussed.

Keywords Parenting skills training · Self-Determination Theory · Autonomy support · Preventive intervention · Motivation

Skillful parenting that supports and responds to children's needs is critical to healthy child and family functioning (Kumpfer and Alvarado 2003). Accordingly, parent training is the treatment of choice for many childhood problems (Taylor and Biglan 1998). Several parenting programs have demonstrated effects on a range of family outcomes (e.g., Patterson et al. 2010; Webster-Stratton et al. 2011); however, there are still important gaps in available treatments.

First, validated parenting interventions reach only a small portion of families who could benefit (Kataoka et al. 2002) and they predominantly target disorders that have already escalated to the point of clinical significance. The long-recognized need for strengths-based prevention and early intervention within the general population is still largely unmet (Kumpfer and Alvarado 2003). Increasingly, family-centered interventions are shifting from a treatment model to a prevention model that involves the proactive recruitment of parents within community settings (e.g., Shaw et al. 2006). These programs often involve cost-effective strategies like group workshops and self-help materials. Low recruitment and high dropout rates can compromise the impact of workshops, however (Assemany and McIntosh 2002; Katz et al. 2001); and given the potential difficulty parents may have adapting general guidelines to their family's particular situation, more personalized approaches are needed.

Second, most preventive parenting interventions were developed for either young children (e.g., Dishion et al. 2008) or early adolescents (e.g., Sanders et al. 2002), as targeting these key developmental transition points can maximize protective potential. There are relatively fewer protocols for 8–12-year-olds, even though roughly 7% of children within this age range have significant learning or attention problems, and 14.5% of their parents have expressed concerns about

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emotional/behavioral difficulties to a teacher or healthcare provider (National Center for Health Statistics 2011; Simpson et al. 2008). The middle elementary school years mark a new emphasis on grades and competition (Stipek and Mac Iver 1989). Children's early performance trajectories become increasingly stable, and by middle school are very difficult to change (Alexander et al. 1993). Eight-to-twelve year-olds are also adjusting to greater responsibility at home and higher expectations for regulating their behavior (Blacher and Feinfield 2013). As families navigate these challenges, problematic interactional patterns can set in, and precursors to more serious issues can emerge (Dishion and McMahon 1998). Given the common family risk processes for youth emotional, behavioral, and academic problems, interventions that field a range of concerns common to this unique developmental stage have potential to make new and valuable contributions (Patterson and Dishion 1988).

Third, most prominent parenting guidelines fall under the rubric of applied behavior therapies (e.g., Triple P, Sanders 2008; Parent Management Training – Oregon Model, Forgatch and Patterson 2010). They stress relationship-building and skillful discipline with comparatively less emphasis on autonomy support, despite evidence that this parenting dimension predicts a host of positive adjustment outcomes, even after accounting for the effects of other positive parenting practices (Gray and Steinberg 1999; Soenens et al. 2008). Interventions that capitalize on the unique benefits of autonomy support are worthy of further investigation.

Self-Determination Theory (SDT; Deci and Ryan 1985; Ryan and Deci 2017) is a theory of human motivation that outlines three basic human needs, those for a sense of autonomy, competence, and relatedness, and three corresponding aspects of the interpersonal environment that support those needs, respectively autonomy support, structure, and involvement. Parental autonomy support involves taking children's perspectives, supporting their initiatives, showing empathy, offering choices, allowing open discussion, and making joint decisions (Grolnick and Ryan 1989). The obverse of autonomy support is parental control, related in the broader parenting literature to the concept of psychological control (e.g., Barber 1996). Controlling parenting pressures children with rigid demands, harsh punishment, coercive rewards, or surveillance. Structure, also referred to in the parenting literature as behavioral control or firm control (e.g., Barber 1996; Schaefer 1965) provides a framework of guidelines and consequences that help children anticipate outcomes and plan behavior. It includes the provision of clear and consistent rules and expectations, predictable consequences, rationales for why rules are important, and parents acting as authority figures (Farkas and Grolnick 2010). Involvement, connected in the literature to acceptance (Schafer 1965) and warmth (Skinner et al. 2005), refers to parents' dedication of time, attention, energy, tangible resources, and emotional availability to children (Grolnick and Slowiaczek 1994).

From an SDT perspective, when parents provide these resources, children will be most intrinsically motivated to pursue their interests and seek challenges. They will also be most likely to take on the regulation of behaviors that are not inherently fun or interesting and engage in those extrinsically motivated behaviors more volitionally and autonomously (Grolnick et al. 1997). A wealth of evidence shows that parenting high on these three dimensions promotes better emotional, behavioral and academic functioning among children. Autonomy support is related to higher levels of children's school motivation and achievement (Soenens and Vansteenkiste 2005; Vasquez et al. 2016), lower levels of depression (Marbell and Grolnick 2013), and more intrinsic life goals (Froiland and Worrell 2017), while parental control has been linked to higher levels of depression and poorer adjustment (Silk et al. 2003; Wang et al. 2007). Structure is associated with children's greater perceived control (Farkas and Grolnick 2010; Grolnick et al. 2014a, 2014b; Skinner et al. 2005) and fewer externalizing problems (Barber et al. 2005). Finally, involvement is related to children's higher motivation and emotional functioning (Grolnick and Slowiaczek 1994; Safford et al. 2007).

Despite these findings, only two prior studies have tested interventions that teach parents to use SDT-based concepts and skills. Froiland (2011) taught parents of 15 4th–5th graders to use autonomy-supportive strategies during homework time. Relative to a comparison group, parents in the treatment condition reported that their children showed more autonomous motivation for learning, and children reported more positive affect during homework. A follow-up qualitative analysis of parents' weekly journal entries during the intervention (Froiland 2015) revealed that parents generalized the autonomy-supportive strategies beyond school-related learning (e.g., to teaching safety, faith-based activities, and character development). Joussemet and colleagues (2014) enrolled 82 parents in an 8-session group workshop based on a popular parenting guide representative of SDT-based concepts, *How to talk so kids will listen and listen so kids will talk* (Faber and Mazlish 2000; 2010). Compared to pre-test, parents' use of autonomy support, involvement and structure increased, and their children reported a greater sense of well-being. These studies were important first steps, but the former was limited to just autonomy-supportive communication around schoolwork and the latter lacked a comparison group. More rigorously controlled trials of comprehensive protocols derived directly from SDT are needed.

Finally, parent motivation is key to the successful implementation of skills, so family-based interventions have increasingly focused on fostering parental internal resources

linked to effective parenting and positive child outcomes. Three parenting experience variables have emerged from the literature as important targets for treatment: parental locus of control, sense of efficacy, and stress. Parental locus of control concerns parents' beliefs about who or what controls children's behavior, with more internal locus of control indicating stronger parental beliefs in their ability to affect children's behavior and more external locus of control indicating stronger beliefs in the role of fate and chance (Campis et al. 1986). External control is associated with authoritarian parenting (Bugental et al. 1989) and child externalizing behavior (Freed and Tompson 2011) and has been shown to improve with parenting skills training (Roberts et al. 1992). Parental sense of efficacy is parents' confidence in their ability to handle difficult childrearing problems (Johnston and Mash 1989). Greater parenting efficacy predicts higher levels of parental monitoring and in turn better child emotional and academic adjustment (Shumow and Lomax 2002). Finally, parenting stress reflects the experience of being overwhelmed by the demands of parenting (Abidin 1995). It is related to lower parental responsiveness and poorer child emotional outcomes (e.g., Crnic et al. 2005; Putnick et al. 2008). In prior studies, improvements in parenting efficacy and reductions in stress have mediated intervention effects on parental consistent discipline (Deković et al. 2010) and child behavior problems (Webster-Stratton and Herman 2008).

In response to these treatment trends, we developed the Parent Check-In, a brief preventive intervention to help parents apply the SDT concepts of autonomy support, structure, and involvement to issues that arise during middle childhood. We used a two-session assessment-feedback "check-up" format (e.g., Miller et al. 1988) advertised as a non-pathologizing health-maintenance opportunity, like getting an annual physical, to attract participants who might not otherwise identify problems in their parenting or refer themselves for help. Assessment and feedback can be a powerful form of intervention in and of itself (Finn 1996; Finn and Tonsager 1997). Our intervention was based on prior models like the Family Check-Up (Dishion and Kavanagh 2003) and Marriage Checkup (Córdova et al. 2005), which include comprehensive interviews and structured feedback to stimulate participants to address problems on their own or by connecting to more intensive services. Both interventions have demonstrated improved family outcomes over time in randomized controlled trials (Connell and Dishion 2008; Córdova et al. 2014; Dishion et al. 2008).

The goal of current study was to assess the feasibility and preliminary effects of the Parent Check-In. First, we aimed to evaluate the viability of the intervention, expecting that it would be feasible to recruit appropriate participants and carry out the study protocol. Second, we aimed to provide initial information about parents whom the intervention attracted. We expected to attract non-distressed to at-risk parents, several naive to treatment, with a range of presenting concerns. The third aim was to provide an initial estimation of the efficacy of the Parent Check-In. Compared to a waitlist comparison group, we expected that parents who received the intervention would show: 1) Greater knowledge of SDT concepts and strategies; 2) Greater improvements in parental locus of control, efficacy, and stress; and 3) greater improvements in skillful parenting on measures of autonomy support, structure, and involvement.

Method

Participants

We recruited participants in a mid-sized northeastern city with materials distributed in local schools and via email blasts to community organizations (e.g., Parent Teacher Organizations). Study flyers designed to normalize participation described the opportunity for a brief, consultative "check-in" customized around parents' questions and needs. Families with children who were in current treatment or had serious psychiatric illnesses were screened out and referred elsewhere. Of the 40 parents who initially contacted the study, 4 were screened out and another 8 did not move forward with participation.

Participants were 28 parents (27 mothers and 3 fathers, 2 participating as couples) with at least one child between 8–12 years of age. Target children included 19 (67.9%) boys and 9 (32.1%) girls, with a mean age of 9.46 ($SD = 1.31$). Eighty-two percent of parents self-identified as European American, 10% as Asian, and 7% as Latino. Respondents varied in education level with 3.6% completing high school, 28.6% some college or vocational training, and 67.9% a college degree or beyond. Regarding relationship status, 67.9% were married, 10.7% in a committed relationship, 14.2% divorced or separated, and 7.1% single.

Procedure

This was a pilot study with an intervention/waitlist control design (see Fig. 1). After consenting to participate, participants completed and returned pre-test (time-1) measures by mail. Upon receipt of the completed pre-test questionnaires, 22 parents were assigned by coin toss to the intervention group and 8 to the waitlist control group. After reaching a waitlist group of 8, all further interested parents were assigned to the intervention group. Unbalanced designs with smaller control groups can be used to estimate intervention effectiveness (Hutchins et al. 2015). We chose

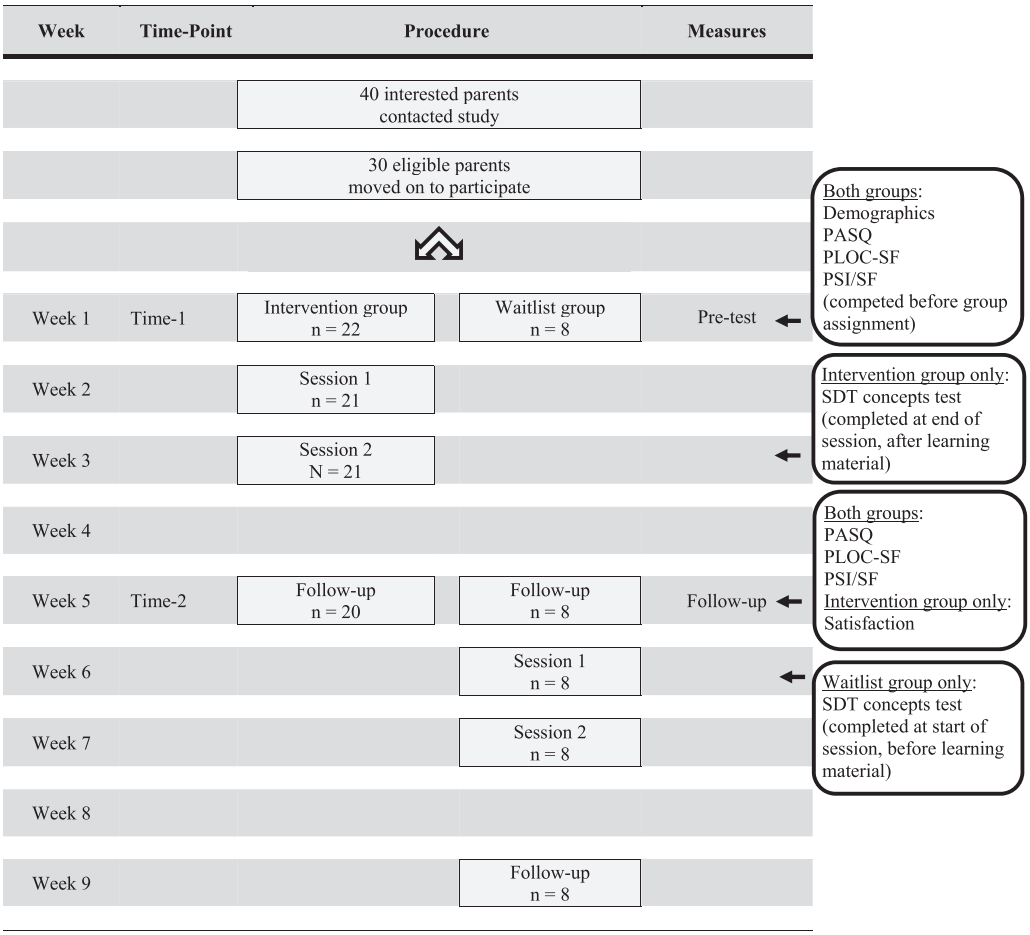

Fig. 1 Timeline of study procedures and data collection

this approach in order to deliver the intervention to a larger number of participants given that the primary study aim was to evaluate feasibility. Parents in the intervention group were scheduled for their Parent Check-In appointments, which included 1.5–2-h assessment and feedback sessions spaced approximately one week apart. They completed and returned follow-up measures by mail two weeks later. From pre-test to follow-up, participation in the intervention condition took approximately 5–6 weeks. Waitlist participants were yoked to intervention participants who enrolled in the study around that same time that they did for the purposes of timing questionnaire administration. Each waitlist control received pre-test and follow-up questionnaires around the same time as one of the intervention participants, generally with about a 5–6-week time lapse between measures. Waitlist participants received the intervention shortly after sending in follow-up measures.

Regarding attrition, one participant dropped out before attending session one. Another did not submit follow-up questionnaires, yielding a total of 28 parents (intervention $n = 20$, waitlist $n = 8$) who completed the full study protocol. Participants received $25 for completing the pre-test questionnaire battery and $25 for the follow-up questionnaire battery.

Intervention protocol

Two trained study clinicians, a licensed clinical psychologist and an advanced doctoral student, administered the Parent Check-In using an intervention manual. In keeping with SDT and the related counseling style, Motivational Interviewing (MI), clinicians delivered the intervention using an involved, structured, and autonomy-supportive style that included expressing empathy, presenting clear and neutral information, and allowing participants to define their own goals (Markland et al. 2005). These techniques have been associated with greater treatment engagement and behavior change in a number of SDT-informed preventive health programs (Fortier et al. 2007; Resnicow et al. 2002; Williams et al. 2006).

Session one began with a structured clinical interview about parents' perceived strengths, weaknesses, concerns, and barriers to reaching their parenting goals. In addition to collecting information, the interview offered an opportunity to build rapport and acknowledge parents' perspectives, fostering a warm, autonomy-supportive clinical exchange. Next, a psychoeducation segment focused on supporting children's needs for a sense of autonomy, competence, and relatedness. Emphasis was on helping children internalize important values and regulate behavior with greater self-direction and follow through. Clinicians used visual aids that outlined the components of parental autonomy support, structure, and involvement and offered rationales for recommendations. The psychoeducation included an experiential empathy-building exercise (Williams et al. 2011) in which parents recollected how they have felt in interpersonal situations that supported verses undermined their own needs for autonomy, competence, and relatedness. Finally, for homework, parents completed a perspective-taking worksheet prompting them to think about activities during which their child feels relatively more or less autonomous (does something because he/she "has to" versus "wants to"), competent (feels "capable" versus "incapable"), and related (feels "close to" versus "distant from" others). The purpose was to encourage empathy around activities that may be sources of conflict.

At the start of session two, parents received brief feedback reports with questionnaire and interview results. Reports elaborated on parents' strengths and weaknesses organized around the dimensions of autonomy support, structure, and involvement. Clinicians framed areas of challenge as "patterns" (Córdova 2009) that parents and children get stuck in (e.g., pressure and control leading to push-back and power struggles), emphasizing contextual factors and understandable reasons surrounding challenges (e.g., lack of resources, busy schedule, stress). Clinicians then presented handouts with specific strategies for implementing autonomy support, structure, and involvement, focusing particularly on parents' greatest areas of difficulty. For example, the autonomy support handout included recommendations for how to express empathy (e.g., "I know you wish you could stay longer at the playground. It's sad to say goodbye to your friends"), offer choices (e.g., "you can play with the ball outside, or pick a different activity inside"), and use autonomy-supportive language (e.g., "Homework gets done before dinner" rather than "You must finish your homework now!"). Parents collaborated with clinicians on how to apply the techniques to their situations and then practiced with role-plays tailored to their needs. Finally, parents used a goals worksheet to set specific objectives for applying newly-learned information and skills. Following the intervention, three parents who reported clinically significant concerns about their children were referred for ongoing mental health services within the community.

Measures

Background information and parenting issues

At time-1, parents reported on family demographics, children's problem-behavior/treatment history, and their own previous help-seeking related to parenting. For the parents participating as couples, only mothers' responses on items pertaining to the family or target child were included in analyses. Not enough fathers participated to analyze their responses separately.

Parents also completed the Parenting Issues Checklist (Prinz et al. 1979; Robin and Foster 1989) which lists 27 common issues that tend to generate conflict between parents and children (e.g., doing homework, helping around the house). Parents indicated which issues have come up in the past month and which they wanted to talk about 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 ("I encourage my child to express his feelings even when they're hard to hear"); Coercion (i.e., control, "I can't afford to let my child decide too many things on his own"); Structure ("I make it clear what will happen if my child does not follow our rules"); Chaos ("I let my child get away with things I really shouldn't allow"); Warmth (i.e., involvement, "I know a lot about what goes on for my child"); and Rejection ("I don't understand my child very well"). Parents rated 30 items on 4-point scales ranging from "Not true at all" to "Very true." The authors report good construct validity and internal reliability for the six subscales ($\alpha = .61–.82$).

The conceptually opposite subscales of structure-chaos and warmth-rejection were aggregated following Skinner et al. (2005) guidelines to create measures of structure and involvement respectively. The autonomy support and control subscales were kept separate as these may represent distinct constructs (Ng et al. 2014) with unique patterns of relations to child adjustment (Marbell and Grolnick 2013).

Parental locus of control, efficacy, and stress

The Parental Locus of Control Scale-Short Form (PLOC-SF, Campis et al. 1986; Lovejoy et al. 1997) assesses locus of control in the parent-child dyad. Two 6-item subscales were included. The Parental Belief in Fate/Chance scale

measures locus of control [e.g., "Being a good parent often depends on being lucky enough to have a good child" (reversed)]. The Parental Efficacy scale measures parental sense of efficacy [e.g., "What I do has little effect on my child's behavior" (reversed)]. Parents responded on 5-point scales ranging from strongly disagree to strongly agree, with higher scores indicating more internal locus of control and greater sense of parental efficacy. The PLOC demonstrates good validity (Lovejoy et al. 1997) and acceptable internal (.81) and test-retest reliability (Roberts et al. 1992).

The Parenting Stress Index—Short Form (PSI/SF; Abidin 1990) is a 36-item measure of parenting stress. The total score derives from three subscales: Parental Distress; Parent-Child Dysfunctional Interaction; and Difficult Child. Parents responded on 5-point scales (strongly disagree to strongly agree) to items such as, "My child makes more demands on me than most children." Abidin (1995) reported good validity, internal consistency (.91) and test retest reliability (.84) for the total measure.

Comprehension of SDT concepts and participant satisfaction

A 10-item multiple choice test of SDT concepts and strategies was developed to assess parents' comprehension and recall of psychoeducational material and served as a manipulation check. Parents in the intervention group received the test at the end of their first Parent Check-In session. Parents in the waitlist group received the test after submitting follow-up measures but before starting their check-in or being exposed to any SDT psychoeducation.

Following the intervention, parents in the intervention group completed a satisfaction questionnaire developed for this study. Ten items rated on 5-point scales (strongly disagree to strongly agree) measured appreciation, perceived effectiveness, and perceived clinician expertise and communication style ($\alpha = .93$).

Data Analyses

First, we ran descriptive statistics to capture the frequency of various concerns and prior help-seeking among participants (reported on the family background/demographics form). We also examined the proportion of the sample reporting at-risk and clinically significant range parenting stress, and the types of parenting issues coming up in participating families. We screened continuous data for normality, examined means, standard deviations, and reliabilities of the study measures, and ran a series of one-way ANOVAs to detect any pre-test differences between groups. As a manipulation check, we used a one-way ANOVA to compare the intervention and waitlist groups' comprehension of SDT concepts and strategies. Higher scores among the intervention group would support the hypothesis that improvement in the intervention group is related to the newly-learned SDT-specific information and skills.

The primary analyses included a series of repeated measures ANOVAs to compare the intervention and waitlist groups on degree of change on study measures over time. Dependent measures were parent reports of autonomy support, control, involvement, structure, locus of control, efficacy, and stress. Treatment (intervention vs. waitlist) was the between-subjects factor and time was the within-subjects factor. To evaluate the efficacy of the Parent Check-In, the effect of interest was the treatment X time interaction. A statistically significant interaction would indicate that change on study measures over time varied by treatment condition. Given the low statistical power of this study, we also considered effect size estimates and confidence intervals when interpreting results (Flechner and Tseng 2011; Wilkinson and Task Force on Statistical Inference 1999).

Results

Description of Participants' Concerns and Prior Help-Seeking

The Parent Check-In attracted participants with a range of mild to moderate concerns and a variety of experiences with prior help-seeking. Of the 28 parents, 7 (25%) reported concerns about a suspected or diagnosed mental health condition in their child, and 4 (14.3%) reported concerns about a learning disability and/or ADHD. Six parents reported that their child had a history of academic, discipline, and/or social problems (21.4%). A small number of participants' children had received prior help in the form of occupational therapy (4), counseling (1), or other professional services (2). Regarding other previous help-seeking, most parents had consulted books (22, 78.6%) and/or their pediatrician (17, 60.7%); a smaller number had previously attended workshops (8, 28.6%). About one third (9, 32.1%) reported that this was their first time seeking help.

Six parents reported clinically significant parenting stress (at or above the 85th percentile) on one or more of the PSI/SF subscales. Two parents reported concerns in the at-risk range (at or above the 80th percentile) relative to the general population. On the Parenting Issues Checklist, parents reported a mean of 10.33 ($SD = 4.35$, range = 3–21) issues that came up in their households over the past month. The most common issues were cleaning bedroom (19), helping around the house (19), using the computer/electronics (18), fighting with siblings (15), and doing homework (15). The concerns that parents most commonly wanted to discuss during the consultation were arguing and talking back, fighting with siblings, and helping around the house.

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

Measure	Mean	*SD*	Possible range	α
Parent issues and skills				
Parenting issues	10.32	4.49	0–28	-----
Autonomy support	3.56	0.50	1–4	0.74
Control	2.20	0.57	1–4	0.74
Structure	1.83	0.76	−3 to 3	0.80
Involvement	1.68	0.90	−3 to 3	0.80
Parenting experiences				
Internal locus of control	3.91	0.56	1–5	0.60
Sense of efficacy	4.29	0.60	1–5	0.60
Parenting stress	1.99	0.55	1–5	0.90

Table 2 Repeated measures analysis of variance comparing the intervention and waitlist groups on degree of change from pre-test to follow-up[a]

	Time		Condition		Time × condition		Effect size
Measure	*F*	*p*	*F*	*p*	*F*	*p*	*d*
Parenting skills							
Autonomy support	2.24	.15	.10	.75	5.92	.02	.55
Control	.62	.44	.46	.50	.92	.35	−.38
Structure	.19	.67	.63	.44	5.70	.03	1.19
Involvement	7.59	.01	.03	.87	.001	.98	.01
Parent experiences							
Internal locus of control	11.39	.002	.20	.66	4.58	.04	.90
Sense of efficacy	.12	.75	2.18	.15	1.52	.23	.57
Parenting stress	.31	.59	1.12	.30	.63	.43	−.97

Note. [a]DF between groups = 1, DF within groups = 25

Preliminary Analyses

Table 1 shows the means, standard deviations, and reliability of study measures. We screened data for normality separately for the intervention and waitlist groups and skewness and kurtosis values were acceptable (±2) for all variables (West et al. 1995). A series of one-way ANOVAs indicated that there were no statistically significant differences at $p < .05$ between the intervention and waitlist groups on pre-test measures.

As a manipulation check, we compared group performance on a multiple-choice test of SDT concepts and strategies covered during the psychoeducational portion of the intervention. A one-way ANOVA showed a statistically significant difference between the intervention and waitlist groups' performance, $F\ (1,\ 26) = 34.71$, $p < .001$. The intervention group ($M = 8.71$, $SD = .78$) scored about 25% higher than the waitlist group ($M = 6.14$, $SD = 1.34$), suggesting that the Parent Check-In successfully imparted specific new parenting information to participants.

Initial Effects of the Parent Check-In

Table 2 presents the results of repeated measures ANOVAs comparing the intervention and waitlist groups on degree of change on study measures from pre-test to follow-up. As indicated by the statistically significant time effect, both the intervention and control groups increased in parent involvement. Results revealed statistically significant treatment X time interactions for parental provision of autonomy support and structure. There was also a statistically significant interaction effect for parental internal locus of control. Effect sizes ranged from moderate for autonomy support to large for structure and locus of control; however, the only confidence interval around a change score that did not include zero was for autonomy support in the intervention group. Inspection of the pre-test versus follow-up means and change scores suggested that parents in the intervention group showed increases in autonomy support and structure provision whereas controls declined on these measures over time (Table 3). The intervention group maintained stable scores on the internal locus of control scale while controls declined. Results for parental use of controlling behaviors, sense of efficacy, and stress were not statistically significant but trended in the direction of greater improvement among the intervention group with small to moderate range effect sizes.

Parents responded positively to the intervention on a satisfaction measure. The mean was 4.67 ($SD = .35$) on a 5-point scale.

Discussion

The results of this study provide initial support for the feasibility and efficacy of a brief, preventive, SDT-informed parenting intervention. The Parent Check-In appeared to be attractive and relevant to parents dealing with a variety of developmentally typical challenges in parenting elementary school-age children. The intervention demonstrated statistically significant effects on the key parenting dimensions of autonomy support and structure provision, as well as on parental internal locus of control.

Through various recruitment methods, the Parent Check-in reached a range of parents from the general population who were experiencing mild to moderate concerns, as well as those looking for information to promote their children's strengths and well-being. Our recruitment materials, which were intended to normalize participation and emphasize parents' own role in determining the focus of their check-in, attracted several eligible participants. These parents tended to be European American, college-educated and middle

Table 3 Mean scores for intervention and waitlist groups on study measures at pre-test and follow-up

	Intervention group						Waitlist group					
	Pre-test		Follow-up		Change		Pre-test		Follow-up		Change	
Measure	*M (SD)*	*95% CI*	*M (SD)*	*95% CI*	*M (SD)*	*95% CI*	*M (SD)*	*95% CI*	*M (SD)*	*95% CI*	*M (SD)*	*95% CI*
Parenting skills												
Auton support	3.51 (.54)	3.26, 3.76	3.72 (.45)	3.51, 3.93	.21 (.23)	.10, .32	3.70 (.39)	3.38, 4.02	3.65 (.33)	3.37, 3.93	−.05 (.32)	−.31, .21
Control	2.27 (.55)	2.01, 2.53	2.25 (.53)	2.00, 2.50	−.02 (.50)	−.25, .21	2.03 (.62)	1.50, 2.54	2.23 (.52)	1.79, 2.66	.20 (.67)	−.36, .76
Structure	1.67 (.77)	1.31, 2.03	1.96 (.71)	1.63, 2.29	.31 (.75)	−.06, .65	2.32 (.59)	1.73, 2.72	1.80 (.51)	1.37, 2.23	−.43 (.64)	−.96, .11
Involv	1.66 (1.03)	1.18, 2.15	1.94 (1.03)	1.46, 2.42	.28 (.52)	.04, .52	1.73 (.47)	1.34, 2.11	2.00 (.53)	1.55, 2.45	.28 (.37)	−.03, .58
Parent experiences												
Internal LOC	3.87 (.53)	3.62, 4.12	3.73 (.69)	3.54, 4.02	−.15 (.56)	−.42, .13	4.03 (.65)	3.48, 4.57	3.36 (.47)	3.38, 4.50	−.65 (.55)	−1.11, −.19
Efficacy	4.33 (.56)	4.07, 4.59	4.46 (.56)	4.04, 4.53	.14 (.56)	−.13, .41	4.20 (.73)	3.59, 4.81	3.96 (.72)	3.77, 4.78	−.24 (1.06)	−1.12, .64
Parenting stress	1.96 (.13)	1.70, 2.23	1.84 (.15)	1.55, 2.13	−.12 (.37)	−.21, .05	2.08 (.20)	1.62, 2.53	2.12 (.23)	1.47, 2.76	.04 (.33)	−.24, .32

Note. *Auton support* autonomy support, *Involv* involvement, *Internal LOC* internal locus of control

class. As in other parenting studies, this project generally attracted participants who were already quite invested in their children's well-being (e.g., Haggerty et al. 2002; Spoth et al. 1999). Greater efforts to engage families traditionally underserved by the mental health system will be important in the future.

The study attracted more parents of boys than girls, consistent with other child adjustment studies (US Department of Health and Human Services 2000). Approximately 30% of the sample reported at-risk to clinical range concerns on standardized measures of parenting stress, and participants reported that on average they were dealing with about ten different childrearing issues at home. Yet, a minority of participants had previously sought specialized professional help (e.g., parenting workshops, counseling) for parenting. Notably, there was almost no attrition. This is consistent with other SDT-informed parenting interventions (Froiland 2011: 0%; Joussemet et al. 2014: 12%) and in contrast to an attrition rate of 28% reported for behavioral parent training programs (Assemany and McIntosh 2002). Satisfaction ratings were very high. Taken together, these findings suggest that the Parent Check-In has the potential to engage at-risk parents who may not otherwise self-refer into treatment and that an SDT-based approach may resonate with parents and keep them engaged. Like the Marriage Checkup on which it was modeled, the Parent Check-In appears to be an attractive, tolerable intervention due to its nonpathologizing nature and convenient, tailored format (Morrill et al. 2011). Moreover, it can still be delivered relatively cost-effectively given its short-term format and emphasis on promoting participants' strengths and motivation for self-directed improvement.

Findings offered initial support for the efficacy of the Parent Check-In, with the intervention group showing improvements in parenting skills relative to controls at a two-week follow-up. Parents who received the Parent Check-In reported more autonomy-supportive behavior, such as valuing their children's points of view and fostering an open exchange of opinions, with a moderate effect size. Intervention participants also reported greater structure provision, including the use of clear and consistent rules and expectations, predictable consequences, and reliable follow-through, with a large effect size.

Both the intervention and waitlist groups improved in involvement from pre-test to follow-up. Perhaps just completing the study questionnaires, which asked about various activities families do together, functioned as a motivating self-assessment that enhanced nonspecific positive parenting effort (e.g., spending time together, saying 'I love you'). Even though the intervention did focus on involvement, the stronger effects emerged for the more SDT-specific skills of autonomy support and structure. Interestingly, we saw gains in parent autonomy support but not as much reduction in its

conceptual obverse, parent control, over the course of this brief intervention and follow-up period. Making positive behavior changes may be easier than undoing negative habits, especially in the context of emotionally charged parenting challenges. It will be important to make a greater effort to specifically target controlling parenting behaviors in future iterations of this intervention.

The intervention group maintained a more internal parental locus of control than the control group from pre-test to follow-up, with a large effect size. That is, they believed that their actions, rather than fate or chance, determined their children's behavior. Results for parental sense of efficacy and stress were not statistically significant. However, there was a trend in the direction of greater improvements in these parenting experiences among the intervention group with moderate to large effect sizes, and it will be important to test these effects on a larger sample over a longer follow-up period.

It is notable that the waitlist group showed poorer outcomes on study measures over time. Perhaps this demonstrates a preventive function of the Parent Check-In, whereby participation protected parents against problematic dips in skillfulness and internal locus of control. It is also possible that signing up for the study produced some optimism that led to more positive responding on pre-test measures which then leveled out to baseline for waitlist participants over time.

Limitations and Future Research Directions

This was a small pilot study with a number of limitations that can be addressed in future research. First, the study lacked power due to its small sample size. Results of hypothesis testing should be considered tentative, given the overlap in confidence intervals for intervention and waitlist group means. The present results may not generalize to fathers or families with children with more serious mental health problems. An inherent limitation of a waitlist control design is that is does not allow for multiple interventions to be tested against each other. The results of this study may therefore reflect a general treatment effect. It will be necessary to replicate results in a larger study with a more diverse sample and an active control condition to build confidence in the findings. Given the moderate effect sizes, it would also be worthwhile to test whether some of the nonsignificant intervention effects would achieve statistical significance in a larger sample.

The two-week time-lag between intervention completion and follow-up data collection was relatively short. For a future study, we recommend follow-up data collection at one month and six months or longer to examine whether parents maintain gains over time. A final limitation of this study was that the data were exclusively parent-reported. To maximize the convenience of the Parent Check-In, children were not directly included in the assessment procedures. As Morsbach and Prinz (2006) have noted, parent self-report measures may reflect child behavior as much as internal parent variables. Moreover, common methods bias (e.g., multiple-item scales presented within the same questionnaire) can lead to spurious effects related to measurement instruments rather than the constructs they measure. A future study would benefit from the addition of child-report and/or observational measures to achieve a fuller picture of parent behaviors and child emotional and behavioral outcomes.

Future studies might assess parenting motivation and motivation for seeking treatment. For example, Ryan et al. (1995) found that participants with more autonomous (rather than controlled) motivation for treatment showed greater involvement and retention in a substance abuse program. A larger study can also examine questions of mediation, for example, do changes in parental internal locus of control lead to changes in parenting skills? And do changes in parenting skills lead to changes in child behavior?

Despite limitations, initial findings supporting the feasibility and efficacy of the Parent Check-In are promising. With continued development and future empirical validation, this intervention may be rolled out in community settings such as doctors' offices where it would be accessible to a wide range of parents who could benefit from tailored skills training and motivation-enhancing support. In this way, we hope that the Parent Check-In can contribute to promoting healthy functioning among youth and families.

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Compliance with Ethical Standards

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

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee (approval provided by Clark University) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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