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## Addressing Parental Stress and Adolescents' Behavioral Problems through an Attachment-Based Program: An Intervention Study

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### ABSTRACT

The primary concern of this study is to address parenting stress and adolescents' behavioral and emotional problems through an attachment based parenting intervention (Connect parents group) for parents of adolescents, in particular to test whether this intervention led to reduced levels of parenting stress, and adolescents' emotional and behavioral problems. 44 parents (33 mothers and 11 fathers;  $M = 50.4$ ,  $SD = 4.9$ ) of adolescents ( $M = 15$  years,  $SD = 1.4$ ) were randomly assigned to one of two groups: An attachment based intervention group (*Connect*), or a wait-list control group. They were assessed before and immediately after the ten-week intervention. Outcome measures were self-reported parenting stress, and multi-informant assessments of adolescents' emotional and behavioral problems. Compared to the control group, parents completing the Connect program reported significant reductions in their adolescents' externalizing behavior problems at treatment completion. Mediation model showed that, among parents completing the Connect program reductions in parental stress were mediated through decreases in adolescents' externalizing behavior problems. Decrease in adolescents' externalizing behavioral problems affected parental stress experienced in caring. These preliminary results underscore the importance of helping parents of adolescents to reduce levels of parenting stress through effective interventions able to curtail adolescents' emotional and behavioral problems. Furthermore, they provide additional evidence for the effectiveness of the Connect program and offer insights into the potential mechanisms that underlie change.

**Key words:** parenting stress, adolescence, behavioral problems, attachment-based parenting intervention, Connect parent group.

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### Novelty and Significance

*What is already known about the topic?*

- Parents of adolescents require in depth support to develop the skills that are necessary to support their teens.
- Connect is a manualized attachment based program for parents of adolescents, that strives to help parents to understand challenging behavior from an attachment perspective.

*What this paper adds?*

- Parents completing the Connect reported significant reductions in their adolescents' externalizing behavior problems at treatment completion.
- Our results provide novel information on the associations between attending an attachment-based intervention and decrease in parenting stress.
- Reductions in externalizing behavior problems were significantly associated to decreases in parents' stress in relation to child-parent relationship quality over the course of treatment.

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Many daily experiences with children are a source of joy or pleasure; however, at the same time, the daily tasks of parenthood and children's behaviors can create situations that may easily be perceived as stressful by parents (Crnic & Low, 2002). Parenting a child provides challenges as the child grows and develops (Putnick, Bornstein, Hendricks, Painter, Suwalsky, & Collins, 2008) and during middle childhood encompasses adaptation to distinctive transformations in human development that affect both the current well-being of children and later life (Collins, Madsen, & Susman-Stillman, 2002). The family's transition out of middle childhood brings with it a new set of issues and concerns for both parents and children, and this period challenges the emotional resources of even the most well-functioning families (Steinberg & Silk, 2002).

Adolescence is a transitional period from childhood to adulthood in which greatest and most rapid neurodevelopmental and social-emotional changes occur (Spear, 2013). The parent of adolescent is often faced with these changes that can make the task of parenting a teen especially demanding, such as increased parenting stress across their child's transition to adolescence deriving from parent-child interaction (Putnick, Bornstein, Hendricks, Painter, Suwalsky, & Collins, 2010; Steinberg & Silk, 2002). Parenting stress is defined as a set of processes that lead to aversive psychological reactions to the demands of parenthood and experienced as negative feelings toward and about the self and the child (Deater-Deckard, 1998, 2004). It is a universal experience which is shared by families across conditions (e.g., different sociodemographic groups) and contexts (Crnic & Low, 2002). Stress experienced by parents can be related to the behavior and adjustment of the child, to parental difficulty in managing parenting tasks and to dysfunctional parenting (Abidin, 1995; Deater-Deckard, 1998; Morgan, Robinson, & Aldridge, 2002).

Furthermore, this developmental transition brings several challenges to youth and it is also associated with vulnerability to a broad range of health problems (Leebens & Williamson, 2017; Paus, Keshavan, & Giedd, 2008) and to a variety of risk-taking behaviors (Steinberg, 2008). Moreover, the prevalence of several emotional and behavioral problems rises, with risk for externalizing behavioral problems increasing among boys and risk of internalizing problems increasing among girls (Thijs, van Dijk, Stoof, & Notten, 2015). These behavioral difficulties are strongly associated with poor scholastic achievement; for example adolescents with externalizing behavior problems are more likely to leave school (Colman et alii, 2009). Adolescents who exhibit externalizing behaviors experience multiple social and health impairments that adversely affect them, their families, and society throughout adult life (Colman et alii, 2009; Erskine et alii, 2016).

One of the factor which buffer adolescents from risk is attachment security within the parent-adolescent relationship (Kobak, Zajac, Herres, & Ewing, 2015; Kobak, Zajac, & Smith, 2009; Moretti, Obsuth, Craig, & Bartolo, 2015; Savage, 2014). Indeed, evidence clearly points to the continued importance of adolescent-parent attachment as a determinant of mental health and a protective factor for adolescents' social-emotional adjustment during this developmental period and beyond (Allen & Tan, 2018; Lee & Hankin, 2009; Moretti & Peled, 2004; Tambelli, Laghi, Odorisio, & Notari, 2012). Notably, increased maternal sensitivity as children move into adolescence is associated with a shift toward attachment security in teens, even among teens who were insecure as children (Beijersbergen, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2012).

Although much has been learned about child behavior and parenting stress, the directionality of the association between these two factors is still difficult to disentangle

(Mackler, Kelleher, Shanahan, Calkins, Keane, & O'Brien, 2015; Morgan, Robinson, & Aldridge, 2002; Neece, Green, & Baker, 2012; Williford, Calkins, & Keane, 2007). Interestingly, while parenting stress and functioning appear to precede child behavior problems the direction of this effect seems to reverse in middle and late childhood, such that the relationship between child externalizing symptoms on parenting stress becomes stronger than the opposite (Bradley & Corwyn, 2013; Mackler *et alii*, 2015). Indeed, research suggests that over time child externalizing behavior problems erode parent-child relationships and lead to parental stress (Bradley & Corwyn, 2013; Pardini, Fite, & Burke, 2008).

As many parents of adolescents require in depth support to develop the skills that are necessary to support their children, helping parents to understand changes that occur during adolescence and reframe the meaning of conflict that reside in parent-child interactions can be of great assistance to parents (Moretti & Peled, 2004). In recent years there has been an increasing interest in the implementation of group-based parenting interventions for parents of adolescents (Medlow, Klineberg, Jarrett, & Steinbeck, 2016; Tully & Hunt, 2016), even though implementation can be challenging (see Olofsson, Skoog, & Tillfors, 2016). The past decade has also seen a growing trend towards the application of attachment theory to understanding adolescent mental health (Ewing, Diamond, & Levy, 2015; Moretti, Obsuth, Mayseless, & Scharf, 2012; Tambelli, Laghi, Odorisio, & Notari, 2012). This has prompted the translation of attachment concepts into evidence based treatment programs for teens and their parents (Ewing, Levy, Scott, & Diamond, 2018; Kobak, Zajac, Herres, & Ewing, 2015; Moretti, Pasalich, & O'Donnel, 2018; Rossouw, 2018).

Connect is a 10-week manualized attachment based program for parents of pre-adolescents and adolescents, that specifically strives to help parents to understand challenging behavior from an attachment perspective (Moretti, Braber, & Obsuth, 2009; Moretti *et alii*, 2012; Moretti *et alii*, 2018). In particular it focuses on strengthening the parental reflective function and parent sensitivity (Moretti *et alii*, 2015), building dyadic affect regulation skills and encouraging parents to promote adolescent autonomy while providing safety and structure (Moretti & Obsuth, 2009). By increasing parents' sensitivity and mindfulness, parents can better understand the attachment needs that drive their youths' problem behavior and consider new and more productive ways of responding to challenging behavior (Moretti *et alii*, 2012). Up to now research on Connect has been shown to be effective in increasing parenting competence and reducing caregiver strain; and lowering teens' oppositional, aggressive and antisocial behavior; internalizing and externalizing symptoms and self-reported use of alcohol, following completion of the program (Giannotta, Ortega, & Stattin, 2013; Högström, Olofsson, Özdemir, Enebrink, & Stattin, 2017; Moretti *et alii*, 2015; Moretti & Obsuth, 2009; Osman, Flacking, Schön, & Klingberg-Allvin, 2017). However, the relationship between changes in teens' behavioral problems and changes in the psychological well-being of parents (i.e., parenting stress) has not been investigated.

The purpose of this study is to address parenting stress and adolescents' behavioral and emotional problems through an attachment-based program for parents of adolescents (Connect; Moretti, Braber, & Obsuth 2009) in Italy. First, we evaluated whether parents of teens attending the Connect program will show significant reductions in parenting stress and whether teens will show significant reductions in behavioral and emotional problems (i.e., externalizing and internalizing behavior problems) compared to those in the control group. Second, we evaluated the directionality between change in adolescent



behavior problems and change in parenting stress. We hypothesized that compared to parents in the control condition, parents completing the Connect program would report: (1) significantly greater reductions in their teens' levels of externalizing and internalizing problems; and (2) significantly greater reductions in parenting stress in three specific domains, parent distress when interacting with their adolescent, the perceived quality of the relationship between the parent and the adolescent, and parenting stress related to adolescent characteristics. Finally, we predicted that reductions in adolescent externalizing problems would act as a mediator in predicting the beneficial effects of the Connect intervention on parenting stress.

## METHOD

### *Participants*

Parents of adolescents were recruited through several secondary schools in the province of Pavia (Italy). 45 of 164 parents agreed to participate; however, after the randomization, one of them declined to participate (1 parent from the intervention group). Therefore, the initial sample consisted of 44 parents (with 6 couples) who agreed to participate: Intervention Group 22 parents (19 mothers),  $M = 49.9$  years,  $SD = 4.3$ ; Control Group 22 parents (14 mothers),  $M = 50.9$  years,  $SD = 5.6$ ; with their adolescents (34% girls;  $M = 15$  years,  $SD = 1.4$ ).

### *Instruments*

*Stress Index for Parents of Adolescents* (SIPA; Sheras, Abidin, & Konold 1998) was used to assess parental stress in relation to three domains: (1) parental beliefs about their teens' specific behaviors (Adolescent Domain, e.g., "I believe that my child skips schools"); (2) parental distress related to interactions with their teen (Parent Domain, e.g., "Having a teenager has caused more problems than I expected in my relationship with my spouse/partner"); and, (3) the perceived quality of the parent-teen relationship (Adolescent Parent Relationship Domain, e.g., "My child thinks I do not love him/her"). Parents rate their level of stress on a five-point Likert scale indicating the extent to which they agree with statements for each domain. Higher scores reflect higher perceptions of stress. As measured by Cronbach's  $\alpha$ , the internal consistency of the SIPA domains in the current sample was high (ranged from  $\alpha = .84$  to  $.95$  across domains).

*Strengths and Difficulties Questionnaire Parent and Youth Version* (SDQ; Goodman 1997; Tobia & Marzocchi 2018) was used to measure negative and positive behavioral attributes of adolescents. Each item is answered on a three-point scale. The SDQ provides four problem scales (emotional symptoms, conduct problems, hyperactivity-inattention and peer problems) as well as a personal strengths subscale (prosocial behavior). The SDQ produces scores for externalizing problems and internalizing problems (A. Goodman, Lamping, & Ploubidis, 2010), with higher scores indicating greater problems. In the current study, we utilized the externalizing and internalizing problems scores ( $\alpha = .83$  and  $.78$ , respectively).

### *Design and Procedure*

Parents were randomly assigned (using a random numbers generator to assure that each participant had an equal chance of being placed in any of the two groups) to the intervention group condition or to the wait-list control group condition. The intervention group attended the 10-week Connect parent program whereas families in

the wait-list condition did not attend this intervention during this period. After the 10-week period, parents in the control condition were offered the same intervention. All parents completed an assessment protocol prior to treatment (Time 1) and at 10 weeks after completion of the program (Time 2).

The Ethical Committee of the Department of Brain and Behavioral Sciences (*Università di Pavia*) approved the study. All parents gave written informed consent to participate. Parents were asked to select one of their offspring as the target child for the intervention. The current study involved data from two assessments. All parents completed an informed consent that fully described the assessment and study procedures. For those randomized to the Connect program, minimal attendance required to participate to the study was 80% and all of them attended at least 90% of the program.

### *Intervention*

*Connect* is a group-based manualized program based on attachment theory and consists in ten 90 minutes sessions lead by two certified trainers. Each session focuses on an attachment principle, reflecting essential aspects of the parent-teen relationship and common parenting challenges. Throughout the program, leaders use reflective exercises and role-plays to promote parental reflective function, sensitivity and empathic responding, dyadic emotion regulation and shared partnership/mutuality in their relationships with their teen (for a comprehensive program description see Moretti *et alii*, 2018). To ensure program adherence and group leaders' competence, leaders completed a three-day standardized training session and received one hour of supervision per week based on videotaped review to ensure adherence and achieve certification.

### *Data Analysis*

Given the high correlations between parent and adolescent reports of behavioral problems (externalizing behavior problems:  $r(36) = .70$ ,  $p < .001$ ; internalizing behavior problems:  $r(36) = .47$ ,  $p = .004$ ) we choose to use only parent report measures given their higher completion rate (100 % completed both T1 and T2) compared to teens (82 % completed both T1 and T2). To control for dependency in the data as a result of both parents attending Connect together ( $n = 6$ ) we only used data from mothers in the correlation analysis.

As is common in longitudinal studies, attrition across time points resulted in a reduced sample size due to the incomplete assessment or non-response (Intervention group:  $n = 1$ ; control group:  $n = 1$ ). Because these missing values were randomly distributed across participants, we performed an intention-to-treat analysis, using the last observation carried forward (LOCF) method (Gupta, 2011). Results were similar when missing data were excluded from the analysis and when the LOCF method was applied. Since variables were normally distributed, the study hypotheses were tested via parametric tests.

We performed independent sample *t*-tests to determine the equivalence of the intervention and control group at Time 1 on study measures. No significant differences between the intervention and control groups, and also between girls and boys on Time 1 study measures were present (all  $p > .05$ ). To evaluate the effect of Connect intervention on parent-reported behavioral problems (externalizing and internalizing behavior problems) and parenting stress (parent, adolescent and adolescent-parent relationship domains), we



employed repeated measures ANCOVAs with group condition as a between subjects factor (intervention and control) and time as a within-subjects factor (pre-and post-test). Gender and treatment attendance (both parents attending Connect together or single parent) were included as covariates to investigate their influence on the outcomes. When their contributions were not significant, the covariates were removed from the final analyses. Partial *eta* squared effect sizes were interpreted according to the criteria suggested in Cohen (1988), whereby a small effect is .01, a medium effect is .06, and a large one .14. Subsequently, mediation analyses using PROCESS (Hayes, 2013) were conducted to test the indirect effect of the intervention on parenting stress. The presence of this simple mediation effect was examined following the recommendations of Hayes (2013). Mediation was tested by assessing the size of the indirect effect and its confidence interval (Bootstrap Confidence Interval; Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007).

## RESULTS

There were no differences between the intervention and control group condition with respect to parents' SES [ $t(42) = 0.19, p = .85$ ] and age [ $t(42) = -0.63, p = .53$ ], children's gender ( $\chi^2 = 2.53, p = .11$ ) and age [ $t(42) = -1.60, p = .12$ ].

Regarding behavioral problems, a significant interaction was evident between time and group condition on adolescents' externalizing behavior problems [ $F(1, 40) = 17.47, p < .001, \eta^2_p = .18$ ], after controlling for the covariates (see Table 1 and 2). Among adolescents whose parents attended the Connect program, a large effect size was found in the reduction of externalizing problems [ $F(1, 21) = 6.5, p = .01, \eta^2_p = .24$ ] from pre-treatment ( $M = 8.46, SD = 4.6$ ) to post-treatment ( $M = 7.2, SD = 3.9$ ). In contrast, externalizing problems in the control group did not decline ( $M = 7.33, SD = 4.9$  vs.  $M = 7.9, SD = 5.0$ , respectively). No interaction effect [ $F(1, 40) = 0.52, p = .48, \eta^2_p = .013$ ] or main effects [time:  $F(1, 40) = 1.19, p = .28, \eta^2_p = .03$ ; intervention group:  $F(1, 40) = 0.12, p = .72, \eta^2_p = .003$ ] were found for internalizing behavior problems.

In contrast to our predictions (Hypothesis 2) interaction and main effects for parenting stress variables did not reach significance: adolescent domain (group x time:

Table 1. Pre-Test and Post-Test Intervention Means and Standard Deviations for All Parent-Reported Variables

Variables		Pre-test <i>M (SD)</i>	Post-test <i>M (SD)</i>
Wait-list control group ( <i>n</i> = 22)	SDQ Externalizing Problems	7.73 (4.9)	7.9 (5.0)
	SDQ Internalizing Problems	4.95 (3.1)	4.95 (3.1)
	SIPA Parent Domain	79.8 (22.3)	76.0 (11.4)
	SIPA Adolescent Domain	112.9 (33.6)	118.8 (31.7)
	APR Domain	41.3 (9.2)	41.3 (9.3)
	SDQ Externalizing Problems	8.46 (4.6)	7.20 (3.9)
Intervention group ( <i>n</i> = 22)	SDQ Internalizing Problems	4.91 (3.9)	4.0 (3.8)
	SIPA Parent Domain	85.7 (20.8)	84.7 (22.3)
	SIPA Adolescent Domain	121.7 (26.8)	105.1 (27.4)
	APR Domain	42.2 (11.7)	40.7 (11.5)

Notes: M= Mean; SD= Standard Deviation; SDQ= Strengths and Difficulties Questionnaire; SIPA= Stress Index for Parents of Adolescents; APR= Adolescent-Parent Relationship.

Table 2. Time and Group Comparisons and Time x Group Interaction After Controlling the Covariates (Gender and Attendance of Either Parent or Single Parent)

Variables	Time			Group			Time x Group		
	<i>F</i>	<i>p</i>	$\eta^2_p$	<i>F</i>	<i>p</i>	$\eta^2_p$	<i>F</i>	<i>p</i>	$\eta^2_p$
Externalizing Problems	0.28	.59	0.01	0.54	.47	0.01	17.47	.00	0.18
Internalizing Problems	1.19	.28	0.03	0.12	.72	0.00	0.52	.48	0.01
Parent Domain	0.12	.73	0.01	2.24	.14	0.05	1.13	.29	0.03
Adolescent Domain	1.31	.58	0.01	0.00	.96	0.00	1.19	.66	0.01
APR Domain	0.65	.42	0.02	0.24	.63	0.01	0.38	.54	0.01

Notes: *F*= *F* value; *p*= *p* value;  $\eta^2_p$ = Partial eta-squared; APR= Adolescent-Parent Relationship.

$F(1, 40)= 1.19, p= .66, \eta^2_p= .005$ ; time:  $F(1, 40)= 1.31, p= .58, \eta^2_p= .008$ ; group:  $F(1, 40)= 0.003, p= .96, \eta^2_p= .00$ ; APR domain (group x time:  $F(1, 40)= 0.38, p= .54, \eta^2_p= .009$ ; time:  $F(1, 40)= 0.65, p= .42, \eta^2_p= .02$ ; group:  $F(1, 40)= 0.24, p= .63, \eta^2_p= .006$ ; parent domain (group x time:  $F(1, 40)= 1.13, p= .29, \eta^2_p= .028$ ; time:  $F(1, 40)= 0.12, p= .73, \eta^2_p= .003$ ; group:  $F(1, 40)= 2.24, p= .14, \eta^2_p= .05$ ).

To further test whether intervention-produces changes in teen's externalizing problems would mediate changes in parenting stress, we employed mediation analyses. Externalizing problems and parenting stress variables at pre-test were used as covariates. First, we tested the effect of intervention (group condition: Wait-list control vs. Connect parent group) on parenting stress related to quality of the relationship parents have with their children (APR domain) at post-test through adolescents' externalizing problems at post-test (Figure 1). We found that group condition indirectly influenced APR domain through its effect in reducing externalizing problems after intervention. In the families whose parents attended the Connect program, adolescents showed a significant reduction in their externalizing problems ( $b= 1.23, p= .03$ ) and, in turn, parenting stress related to the parent-teen relationship decreased ( $b= 0.81, p= .03$ ). A bias-corrected bootstrap confidence interval for the indirect effect ( $b= 1.00$ ) was entirely above zero (0.114 to 3.031).

Second, we tested the effect of the intervention on Adolescent domain at post-test through adolescents' externalizing problems at post-test. A bias-corrected bootstrap confidence interval for the indirect effect ( $b= 1.88$ ) contained zero (-0.268 to 6.288), showing that the model was not significant. Third, we focused on Parent domain and the model was not significant: a bias-corrected bootstrap confidence interval for the indirect effect ( $b= 0.44$ ) contained zero (-0.289 to 3.131).

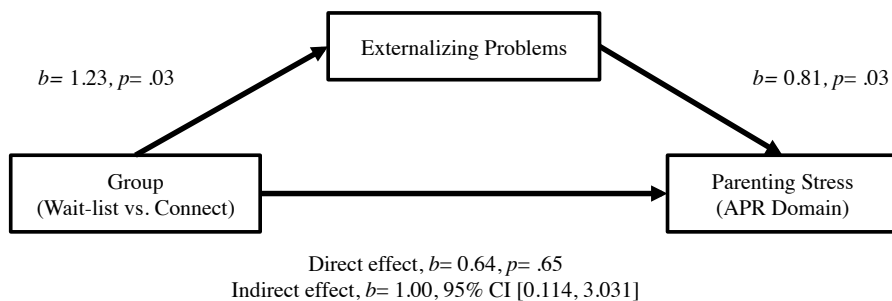


Figure 1. Model of group condition (Wait-list vs. Connect condition) as a predictor of parenting stress related to quality of the relationship parents have with their children (APR domain), mediated by youth's externalizing problems. The confidence interval for the indirect effect is a BCa bootstrapped CI based on 1000 samples. APR Domain= the Adolescent-Parent Relationship domain of the Stress Index for Parents of Adolescents.

## DISCUSSION

In the present study, we addressed parenting stress and adolescents' behavioral and emotional problems through an attachment-based parenting intervention (Connect parents group) for parents of adolescents. Consistent with prior studies, we found that parents completing the Connect program reported significant reductions in their adolescents' externalizing behavior problems at treatment completion. Interestingly, we also found that reductions in teen problem behavior led to reduction in parents' stress levels, specifically stress related to the quality of interactions they have with their children. This study adds to the current literature by highlighting a putative mechanism of change, such that attachment based treatment produces a significant reduction in externalizing behavior problems, and in turn this change predicts a decrease in levels of parenting stress.

Over the past decade, evidence has accumulated supporting the effectiveness of an attachment-based program for parents, Connect, in reducing behavioral and emotional problems (Moretti *et alii*, 2015; Moretti & Obsuth, 2009; Osman *et alii*, 2017). This study reports the preliminary findings of the first attempt to implement the Connect program in Italy using a design in which parents were randomly assigned to an attachment based intervention group, or a wait-list control group. Moreover, the current study replicates previous findings of effective treatment outcomes of Connect (Moretti *et alii*, 2018). Adolescents' behavioral problems significantly decreased in externalizing behavior problems and a large effect size was observed in this regard. This provides further support to data showing that Connect has a substantial impact on reducing behavioral problems even in the short-term period (Statin, Enebrink, Özdemir, & Giannotta, 2015), in addition to long-term periods (Högström *et alii*, 2017). Although our results highlight the importance of this parent intervention in reducing youths' externalizing problem behavior, no significant change in internalizing behavior problems has been found. Significant reductions in these latter have been reported in some prior studies evaluating Connect in non-randomized design trials (Moretti *et alii*, 2015; Moretti & Obsuth, 2009); however these studies included larger samples and sample characteristics may differ from the current sample. In addition, internalizing problems (e.g., emotional problems) are often more difficult to detect by parents and thus changes in this regard may go unnoticed (Osman *et alii*, 2017). A notable reduction in internalizing behaviors may not be evident in the course of a short 10-week intervention; however reductions may become evident in longer-term follow-up.

Our results provide novel information on the associations between attending an attachment-based intervention and decrease in parenting stress outcomes. Interestingly, we found that reductions in externalizing behavior problems were significantly related to decreases in parents' stress related to child-parent relationship quality (e.g., degree of communication, amount of affection) over the course of treatment. Connect program was effective in producing adolescent's behavioral improvements, and these, in turn, mediated positive changes in parenting stress. These results are in line with other studies investigating the effect of externalizing symptoms on parents' stress (Bradley & Corwyn, 2013; Mackler *et alii*, 2015; Pardini *et alii*, 2008), and contribute in better understanding possible mechanisms implied in this outcome; the findings we obtained highlight how actually a reduction in teen externalizing problems was the element that led to a decrease in stress experienced by parents in the caring tasks. It is noteworthy that we completed an additional analysis to test the reverse pathway -i.e., whether

reductions in parenting stress led to lower levels of youth externalizing problems (Neece *et alii*, 2012). Result for this mediational pathway was not significant and confirms our conclusion that reduced externalizing behavior problems predicted lower levels of parenting stress over the course of treatment, and not vice versa. Nevertheless, it should be noted that the current study was not equipped to provide a definitive conclusion, as it is a preliminary examination.

Our study had both strengths and limitations. This was the first research that examined mediational pathways between reductions in youths' behavior problems and parenting stress over the course of Connect, thus more deeply examining putative mechanisms of change in both parents and adolescents' functioning related to an attachment based treatment. We also retained almost all parents who were randomized to the intervention and control group conditions. One limitation of the current study is that we relied only on parents' reports of their teens' functioning (Ozturk, Barone, & Barone, 2018) due to the limited number of adolescents who provided self-report data. Multi-informant data is always preferable; however we note that there was a strong positive correlation between parent and youth reports of behavioral problems at the beginning of the treatment, suggesting that parent reports may be considered a reliable indicator. As this was a preliminary report, we recognize that we are not yet able to report on longer-term effects for this intervention. Testing long-lasting effect of the treatment is necessary to determine whether improvement is sustained over time and will also be important in determining whether other significant improvements (i.e., internalizing behavior problems) from baseline to follow-up.

In conclusion, the present study found that an attachment based intervention group specifically designed for parents of adolescents (Connect) reduced adolescents' externalizing behavior problems over the course of treatment, thus supporting continued research on parenting interventions specifically addressing adolescence. Moreover, we found that treatment lowers parenting stress indirectly through lower levels of externalizing behavior problems. The current findings provide further information on potential mechanisms responsible of the change highlighted thanks to intervention attendance by addressing specific variables that appeared to count in the aforementioned change.

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