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Are Relationship Enhancement and Behavior Management “The Golden Couple” for Disruptive Child Behavior? Two Meta-analyses

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Parenting programs for reducing disruptive child behavior are built on two main perspectives: relationship enhancement (i.e., unconditional sensitivity diminishes disruptiveness) and behavior management (i.e., conditional rewards diminish disruptiveness). Two meta-analyses (156 and 41 RCTs; $N_{\text{total}} = 15,768$; $M_{\text{childage}} = 1\text{--}11$ years) tested the theoretical model that integrating relationship enhancement with behavior management is superior to behavior management alone. The integrative approach showed no overall superiority. Relative to behavior management, the integrative approach was superior in treatment settings, but inferior in prevention settings (Meta-analysis 1). The integrative approach and behavior management approach did not have differential sustained effects up to 3 years after the program (Meta-analysis 2). Findings argue against current practice to implement the same parenting programs in treatment and prevention settings.

Children develop disruptive behavior in part through interaction with their parents. Parenting programs can curtail the development of disruptive behavior by supporting parents to develop a more positive relationship with their child, reinforce positive child behavior, and use adequate, nonviolent disciplining techniques (Reyno & McGrath, 2006; van Aar, Leijten, Orobio de Castro, & Overbeek, 2017). Although the overall effects of parenting programs on disruptive child behavior are well-

studied, it remains unknown which of the often many skills taught in parenting programs are most essential for effective and sustained reductions in disruptive child behavior. This knowledge gap hinders much needed strengthening of the effectiveness and scalability of parenting programs. We test one of the most dominant theoretical models on parenting program components: the “golden couple hypothesis” that an integrative approach of teaching parents both relationship enhancement and behavior management is the most effective way to reduce disruptive child behavior.

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Most parenting programs designed to reduce disruptive child behavior are built on two main perspectives. First, relationship enhancement perspectives posit that children’s disruptive behavior originates from a lack of warmth and nurturing from parents (Gardner, 1987; Kochanska, Forman, Aksan, & Dunbar, 2005; Maccoby & Martin, 1983). Through this lack of positive involvement children develop distorted cognitive models on social relationships (Cassidy & Shaver, 2008; Greenberg, Speltz, & DeKlyen, 1993). Programs based on relationship enhancement perspectives teach parents skills such as sensitivity and responsiveness to the child’s needs, for example, in child-led play, and feeling empathy and compassion for the child (e.g., *Tuning into Kids*; Havighurst et al., 2013). These skills aim to prevent or repair distressed parent–child relationships. Second, learning theory perspectives posit that children develop disruptive behavior when parents unwittingly reward disruptive behavior instead of positive behavior (i.e., coercive parenting, Patterson, 1982). Programs based on learning theory teach parents behavior management skills such as positive reinforcement (e.g., providing praise and incentives) and preventing negative reinforcement (e.g., ignoring, removing privileges, or “time-out”; *1-2-3 Magic Parenting Program*; Phelan, 2010). These skills aim to break the coercive cycles underlying the maintenance of disruptive child behavior, by redirecting the parents’ attention from the child’s negative behavior to the child’s positive behavior.

Insight into the added value of relationship enhancement above and beyond behavior management not only informs clinicians on effective parenting program components, but also sheds light on the complex interplay between parent–child relationship quality and behavior management in shaping child behavior. Some have suggested that reduced relationship quality and coercion codevelop (e.g., Scaramella & Leve, 2004; Shaw & Bell, 1993; Trentacosta et al., 2008), or that they contribute to child behavior more independently (e.g., Gardner, 1987). Others suggest that reduced relationship quality is mainly a consequence of coercion (Akcinar & Shaw, 2017; Patterson, 1982; Patterson, DeBaryshe, & Ramsey, 1989), or that relationship quality can buffer against the effects of coercion (e.g., Kochanska, Barry, Stellern, & O’bleness, 2009). If teaching relationship enhancement in addition to behavior management increases parenting program effects, this suggests that relationship quality plays a unique role in

shaping disruptive child behavior, above and beyond coercion. If it does not increase parenting program effects, this might suggest that it is primarily coercion, rather than a combination of coercion and a distressed relationship, that shapes disruptive child behavior.

*Relationship Enhancement and Behavior Management:
A Golden Couple?*

Constance Hanf (1969) laid the groundwork for an integrative parenting program model in which parents first learn relationship enhancing skills and then behavior management skills. This two-step approach is now the cornerstone of many established parenting programs (see Kaehler, Jacobs, & Jones, 2016, for an overview). The premise underlying this model is that improvement of the parent–child relationship amplifies the effects of behavior management (Bandura & Walters, 1963; Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993). For example, children may value praise from their parent more if they have a more positive relationship with their parent. Empirically, parental behavior management and relationship quality are both associated with the development of disruptive child behavior (Pinquart, 2017), which suggests that both are important for healthy child development. More generally, many parenting program researchers and practitioners may intuitively expect that teaching parents multiple skills, thus providing them with a comprehensive “toolkit,” is more effective than teaching a limited set of skills. In sum, what we refer to as the golden couple hypothesis is that teaching parents relationship enhancement in addition to behavior management is more effective for reducing children’s disruptive behavior than behavior management alone.

There are, however, reasons to question the superiority of teaching parents relationship enhancing skills in addition to behavior management skills. First, if parents reduce their child’s disruptive behavior through the use of behavior management skills, this might already promote a more positive parent–child relationship, lessening the need to teach relationship enhancing skills separately. Specifically, when children become less disruptive, it becomes easier for parents to express warmth and sensitivity (Combs-Ronto, Olson, Lunkenheimer, & Sameroff, 2009; Wiggins, Sofronoff, & Sanders, 2009). Besides, teaching more skills in one program can backfire. Briefer interventions often outperform longer

interventions (e.g., Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003; Walton, 2014), and providing additional services to teaching core parenting skills tends to be associated with weaker, rather than stronger, program effects (e.g., Kaminski, Valle, Filene, & Boyle, 2008). Despite the theoretical dominance of the integrative approach in parenting program research and clinical practice, the empirical merit of this golden hypothesis remains unknown.

One previous meta-analysis (Kaminski et al., 2008) explored associations between a range of parenting program components and program effects on reduced disruptive child behavior, and found that relationship enhancement (i.e., sensitivity) and behavior management were each associated with stronger program effects. The fact that these two components are often integrated (Kaehler et al., 2016) makes it difficult to interpret these individual associations, when the presence (vs. absence) of the other component is not taken into account. A test of the golden couple hypothesis requires comparing the effects of programs that integrate relationship enhancement and behavior management with programs that teach behavior management alone.

Prevention Versus Treatment Effects

Most parenting programs were originally designed for the treatment of disruptive behavior disorders in children (Weisz & Kazdin, 2010). The same programs are now increasingly implemented for prevention purposes (Kaehler et al., 2016). Prevention programs target either an entire population of families, or families who are identified because they share significant risk factors for the development of disruptive child behavior. Treatment programs target families with high levels of disruptive behavior, or diagnosed behavior disorders.

If programs developed for treatment purposes are adapted at all for prevention purposes, they are adapted in terms of intensity (e.g., number of sessions, group vs. individual; e.g., Sanders, 1999; Webster-Stratton & Reid, 2010), not in terms of the skills taught. This approach assumes that families in prevention and treatment settings benefit from the same approach. This may not necessarily be the case, because prevention and treatment target in part different families. If, for example, parent-child relationships are less distressed in families in universal or selective prevention than in treatment, because disruptive behavior problems are less developed in prevention, then teaching parents

relationship enhancing skills may amplify the effects of behavior management in treatment, but not in prevention. We therefore test whether the golden hypothesis holds particularly in treatment, relative to prevention.

Immediate Versus Sustained Effects

The need to integrate relationship enhancement and behavior management may also depend on whether the focus of programs is on immediate or more sustained reductions in disruptive child behavior. Relative to relationship enhancement, behavior management tends to have stronger immediate effects on disruptive child behavior (e.g., Eisenstadt et al., 1993). Relationship enhancement may be a gradual process that requires time to evolve. Observational research indeed suggests that parental behavior management has stronger associations with shorter term child development, and that parental relationship enhancement has stronger associations with longer term child development (Villadsen, 2016). We test this “sleeper effect” of teaching relationship enhancement in parenting programs.

This Study

This study addresses whether the two presumably most pivotal parenting program components should be integrated to most effectively modify disruptive child behavior in early and middle childhood. Meta-analysis 1 tests the overarching golden couple hypothesis that integrating relationship enhancement with behavior management is more effective than behavior management alone. In addition, we test whether this hypothesis holds specifically in treatment, relative to prevention, where parent-child relationships tend to be more distressed. Meta-analysis 2 tests whether the golden couple hypothesis holds specifically for obtaining more sustained effects (i.e., several months or years after the program).

Understanding the program components that most profoundly affect child development provides an important, but underused scientific opportunity to integrate theoretical and intervention research (Cicchetti & Hinshaw, 2002; Rutter, Pickles, Murray, & Eaves, 2001). It can identify the aspects of parenting that uniquely shape child behavior, and those aspects of parenting that may be less influential in the light of other aspects of parenting. This knowledge can serve to guide much needed strengthening of established parenting programs that tend to yield

robust but small to modest effects at best (e.g., Weisz et al., 2017).

Meta-analysis 1

We capitalize on 4 decades of rigorous parenting program evaluation research to test, first, whether programs that teach parents relationship enhancement in addition to behavior management more effectively reduce disruptive child behavior than programs that teach behavior management alone. Second, we test whether this differential effectiveness holds particularly in treatment, relative to prevention. We focus on the additive value of relationship enhancing skills to behavior management because behavior management is the dominant approach of parenting programs in early and middle childhood (e.g., Kaehler et al., 2016), as opposed to in infancy, where relationship enhancement is the dominant approach (e.g., Bakermans-Kranenburg et al., 2003). We thus test the empirical merit of adding relationship enhancement to a more basic behavior management approach.

Method

Data Sources, Study Selection, Inclusion Criteria

We identified randomized controlled trials of parenting programs for reducing disruptive child behavior that taught parents skills based on (social) learning theory perspectives. We updated our systematic literature search from Leijten, Melendez-Torres, Knerr, and Gardner (2016) to include studies up to January 2016 (see Supporting Information for our search strategy). Inclusion criteria were as follows: (a) comparing a parenting program based on the principles of (social) learning theory to any type of control condition; (b) random assignment to conditions; (c) more than 50% of program sessions focused specifically on parenting; and (d) children’s mean age was between 2 and 9 years. We focused on this age group specifically because programs for infants and adolescents may require different content, due to the somewhat different parenting needs of children in different developmental stages. We excluded programs for parents of special populations such as children in temporary foster care, children of the street, and children with severe disabilities. Samples of children with attention deficit hyperactivity disorder (ADHD) that came up in our search were included, but only outcome

measures of general disruptive behavior, not ADHD symptoms, were included in our meta-analysis. One researcher assessed abstracts and full texts of studies that were likely to meet inclusion criteria. Uncertainties and the final list of studies included in the review were assessed by the first and third author.

Data Extraction

Relationship enhancement. We classified programs as teaching relationship enhancement if the study article, online program information, or protocol reported that at least some of the core parenting skills taught (a) specifically aimed to improve the parent–child relationship (e.g., sensitivity and responsiveness to the child’s needs), rather than to improve children’s behavior, or (b) are known from the broader parenting program literature to have the goal to improve the parent–child relationship, such as child-led play and feeling empathy and compassion for the child. Importantly, encouraging parents to be involved, or to spend quality time with children, was not coded as teaching relationship enhancing skills. Programs had to explicitly teach parents *how* to build a positive parent–child relationship while spending time together. We thus distinguished between programs that more generally encourage parents to invest in a positive relationship with their child, and programs that actually teach parents how to enhance the parent–child relationship.

Treatment versus prevention. We classified studies as situated in either a treatment or prevention setting based on whether children had already developed disruptive behavior. Treatment studies included children who were diagnosed with externalizing behavior disorders, referred for disruptive behavior, or scored above a (sub)clinical cut-off on a measure of disruptive child behavior. Prevention studies included children who were either part of the general population, or who were selected based on the presence of risk factors other than emerging disruptive child behavior (e.g., social or economic disadvantage, parental mental health problems).

Effect size calculation. We converted effect sizes into Cohen’s *d* values based on means and standard deviations reported at postintervention. As recommended in the analysis of randomized trials, we preferred means and standard deviations that were analysis of covariance-adjusted for baseline. Where needed, we used alternative summary statistics (e.g., *p*-values and sample sizes, or *t*-test statistics) to calculate Cohen’s *d* values. For each effect size,

we “differenced” the relationship enhancement component in the intervention and control conditions to create a binary variable indicating that relationship building was taught in the intervention condition and not in the control condition (coded as 1), versus in neither or both conditions (coded as 0).

Risk of bias. We assessed the risk of bias in each study (as high, low, or unclear) using the Cochrane Collaboration tool (Higgins & Green, 2011). All studies reported random allocation, but particularly older studies sometimes failed to describe how sequences were generated and whether allocation was concealed. Because parents actively participated in the programs, participant blindness was not possible in any of the studies. For most studies, risk of bias was low on blinding of outcome assessors, addressing incomplete data, analyzing dropouts, and selective outcome reporting.

Analytic Strategy

Most studies included multiple effect sizes for reduced disruptive child behavior. Various approaches to address this challenge exist, including selection-based protocols (i.e., decision rules to select the “most appropriate” effect size), multivariate meta-analysis, and robust variance estimation approaches (Tanner-Smith & Tipton, 2014). We chose to use a robust variance estimation approach, as selection-based protocols are prone to bias and lose information from included studies, and multivariate meta-analysis works best when effect sizes are correlated, but not conceptually and statistically exchangeable, as was the case in this analysis. Robust variance estimation meta-analysis reweights the multiple effect sizes within studies using an approximate variance-covariance matrix, resulting in valid point estimates and significance tests even when the exact variance-covariance matrix of effect sizes within studies remains unknown (Hedges, Tipton, & Johnson, 2010).

Because very few studies included multiple intervention conditions that varied in whether they taught relationship enhancement, we estimated the model with only between-study variables. Interpretation of the meta-regression coefficient of this model is roughly the same as in a “standard” meta-regression; that is, it represents the difference in effect size between studies that compare an intervention with relationship enhancement against a control and studies that compare an intervention without relationship enhancement against a control. Analyses were conducted on March 31, 2017.

Table 1
Summary of Studies Included in Meta-analyses 1 and 2

	Meta-analysis 1 (<i>k</i> = 156) (<i>n</i> = 368)	Meta-analysis 2 (<i>k</i> = 41) (<i>n</i> = 157)
Sample		
Total number of children	13,478	5,648
Mean age (<i>M</i> _{mean age})	2–9 (4.93)	1–11 (5.54)
Program components (%)		
Behavior management	100	90
Relationship enhancement	44	46
Program (%)		
Triple P	33	20
Incredible years	24	15
Parent–child Interaction therapy	9	2
Other	34	63
Geographical region (%)		
North America	36	46
Northwest Europe	27	37
Australia/New Zealand	27	10
Other	10	7

Note. *k* = number of studies; *n* = number of effect sizes.

Results and Discussion

Included Studies

One hundred fifty-six studies met inclusion criteria (178 intervention vs. control comparisons; 386 effect sizes). Table 1 provides summary descriptives for the included studies; characteristics of each of the 156 studies are included as Supporting Information. Forty-four percent of the programs taught relationship enhancing skills in addition to behavior management, 56% did not teach relationship enhancing skills. The average effect size of the programs on disruptive child behavior was $d = -.47$ (95% CI [–.55, –.40]).

Additive Value of Relationship Enhancement to Behavior Management

Programs that integrated relationship enhancement with behavior management ($d = -.51$) did not have a significantly stronger effect on disruptive child behavior than programs that taught behavior management only ($d = -.44$; $\beta = -.08$, 95% CI [–.24, .08], $p = .310$). In other words, the effectiveness of programs did not depend on whether they explicitly taught parents how to enhance a positive relationship with their child. Thus, the golden couple hypothesis was not supported for the meta-analytic sample at large.

In a post hoc sensitivity analysis, we replicated our findings after excluding studies on children with ADHD (9% of the studies). Also in this sub-sample of studies, adding relationship enhancement to behavior management did not yield stronger effects ($\beta = -.11$, 95% CI $[-.31, .08]$). Thus, results did not hinge on whether or not studies on children with ADHD were included.

Treatment Versus Prevention

We found a main effect of treatment versus prevention, such that programs in treatment settings ($d = -.57$) yielded larger effects than programs in prevention settings ($d = -.24$; $\beta = .33$, 95% CI $[.20, .47]$, $p = .000$). This is in line with earlier comparisons of treatment versus prevention effects of parenting programs (e.g., Menting, Orobio de Castro, & Matthys, 2013), and may in part be due to children's larger scope for improvement and parents' motivation to change.

We tested whether adding relationship enhancement to behavior management was associated with stronger intervention effects in treatment specifically. We therefore tested whether there was a significant Relationship Enhancement \times Treatment (vs. prevention) interaction effect such that relationship enhancement amplified program effects more

in treatment than in prevention. This was indeed the case ($\beta = .28$, 95% CI $[.0006, .5639]$, $p = .0495$). Specifically, teaching relationship enhancement in addition to behavior management yielded stronger program effects in treatment, but weaker effects in prevention (Figure 1). In this interaction effect we controlled for the main effect of treatment versus prevention. Thus, the golden couple hypothesis was supported for parenting programs in a treatment setting, but not for parenting programs in a prevention setting.

To exclude the possibility that the smaller effects in prevention programs that teach relationship enhancement could be explained by less use of established teaching methods (e.g., role play, modeling, video vignettes), we conducted a post hoc sensitivity analysis to check for possible confounding effects between including a relationship enhancement component and 11 different teaching methods. Relative to preventive behavior management programs, preventive integrative programs did not use fewer established teaching methods. If anything, they made *more* use of two teaching methods (providing written materials and rewarding parents for their efforts). Thus, there is no evidence to suggest that the smaller effects in prevention programs that teach relationship enhancement can be explained by less use of established teaching methods.

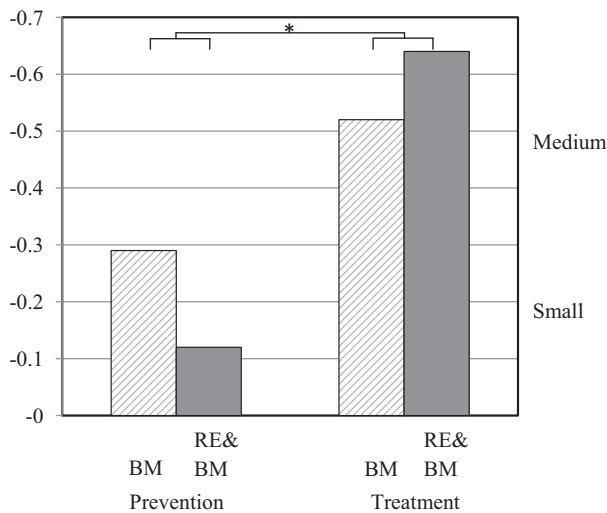


Figure 1. Meta-analysis 1 shows that adding relationship enhancement to behavior management yields stronger effects in treatment and weaker effects in prevention.

Note. * $p < .05$; y-axis indicates Cohen's d effect size on disruptive child behavior; BM = programs that teach behavior management only ($k = 106$; $n = 215$); RE & BM = programs that teach relationship enhancement and behavior management ($k = 72$; $n = 171$). k = number of intervention versus control conditions; n = number of effect sizes.

Meta-analysis 2

Because relationship enhancement may be a gradual process that needs more time to evolve, Meta-analysis 2 tests whether teaching parents relationship enhancement is important for obtaining more sustained program effects. Evaluations of the causal effects of parenting programs on child behavior months or years later are relatively scarce, mainly because most studies in this field use waitlist control conditions. To nevertheless include sufficient numbers of studies and effect sizes, we widened the children's mean age range and also included studies on programs that taught parents relationship enhancement only.

Method

Data Sources, Study Selection, Inclusion Criteria

We identified randomized controlled trials of parenting programs for reducing disruptive child behavior that included assessments of child

behavior at least 1 month after the end of the program. We updated our systematic literature search from van Aar et al. (2017) to include studies up to July 2016. Inclusion criteria were as follows: (a) comparing a parenting program that includes at least one face-to-face meeting to any type of control condition; (b) random assignment to conditions; (c) including measurements at preintervention, immediately postintervention, and at least 1 month follow-up; and (d) children's mean age was between 1 and 12 years. We excluded programs for parents of children with severe disabilities. The fourth author assessed abstracts and full texts of studies that were likely to meet inclusion criteria. Uncertainties and the final list of studies included in the review were assessed by the first and fourth author.

Data Extraction

Behavior management. We classified programs as teaching behavior management if the study article, online program information, or protocol reported that teaching positive reinforcement techniques (e.g., praise and rewards) and/or negative consequences (e.g., "time-out" and removal of privileges) was part of the core program components.

Relationship enhancement. The same procedure was used as for Meta-analysis 1.

Effect size calculation. We converted effect sizes into Cohen's *d* values based on means and standard deviations reported at pre and posttreatment. Similar as for Meta-analysis 1, we differenced the relationship enhancement component in the intervention and control conditions for each effect size to create a binary variable indicating that relationship enhancement was taught in the intervention condition and not in the control condition (coded as 1), versus in neither or both conditions (coded as 0).

Risk of bias. The same procedure was used as for Meta-analysis 1, yielding similar outcomes.

Analytic Strategy

We estimated a multilevel model to account for multiple effect sizes clustered within studies. Effect sizes were coded as to time (i.e., number of months after program termination) and studies were coded as to the components in the intervention condition (i.e., relationship enhancement, behavior management, or both). Thus, time was a within-study variable with intercept 0. One study included multiple intervention conditions that differed in terms of their program components. We treated intervention versus control comparisons in this study as separate

studies to prevent spurious within studies inference arising from low variation on program components within studies. All models were estimated with random effects between studies, and a compound symmetry correlation matrix within studies assuming effect sizes from different measures of disruptive behavior were intercorrelated at $\rho = .80$.

First, we estimated models examining the between-study differences in including a behavior management component (yes or no) and a relationship enhancement component (yes or no). Second, we estimated between-study differences among programs that included behavior management to identify the impact of adding relationship enhancement (i.e., Meta-analysis 1 replication). Third, we estimated cross-level interactions (i.e., Integrative Approach vs. Behavior Management Only \times Time Within Studies) to identify the impact of adding relationship enhancement on change in program effects over time. Analyses were conducted on March 31, 2017.

Results and Discussion

Included Studies

Forty-one studies met inclusion criteria. Together, they included 42 intervention versus control comparisons and 157 effect sizes. Follow-up time ranged between 1 and 36 months across studies, with a mean follow-up time of 9 months ($SD = 6$ months). Thirty per cent of the effect sizes ($n = 98$) reflected effects of at least 1 year after the program had ended. Table 1 provides summary descriptives for the included studies; characteristics of each of the 41 studies are included as Supporting Information.

Thirty-six per cent of the programs taught both relationship enhancement and behavior management; 54% taught behavior management only; 10% taught relationship enhancement only. The average effect of parenting programs on disruptive child behavior across time points was $d = -.30$ (95% CI $[-.37, -.23]$). There was no main effect of either relationship enhancement ($\beta = .11$, 95% CI $[-.04, .25]$, $p = .153$) or behavior management ($\beta = -.06$, 95% CI $[-.27, .15]$, $p = .578$) on disruptive child behavior.

Additive Value of Teaching Both Relationship Enhancement and Behavior Management

We replicated the Meta-analysis 1 findings that programs that integrated relationship enhancement

and behavior management were not more (or less) effective than programs that taught behavior management without relationship enhancement, when taking both immediate and sustained effects into account ($\beta = .10$, 95% CI $[-.07, .26]$, $p = .256$). In a post hoc sensitivity analysis, we checked whether these findings remained the same after excluding studies on infants (children younger than 2; 15% of the studies) and/or preadolescents (children older than 9; 32% of the studies). Also in this subsample of studies, adding relationship enhancement to behavior management did not yield more sustained program effects ($\beta = .09$, 95% CI $[-.05, .22]$).

We extended the Meta-analysis 1 findings by testing whether teaching parents relationship enhancement in addition to behavior management (vs. behavior management only) interacts with the time between intervention termination and assessment, such that teaching relationship enhancement is associated with stronger increases (or weaker decreases) in program effects over time. We found no significant Integrative Approach \times Time interaction ($\beta = .01$, 95% CI $[-.01, .02]$, $p = .287$). Teaching relationship enhancement in addition to behavior management did not yield more sustained effects over time than teaching behavior management only (Figure 2).

Some studies show more sustained effects of parenting programs than other studies (van Aar et al., 2017). Our findings show that these differences across studies could not be explained by whether the programs taught both relationship enhancement and behavior management, or behavior management

alone. Thus, the golden couple hypothesis did not hold for obtaining more sustained program effects.

General Discussion

We tested the dominant theoretical model that teaching parents both relationship enhancement and behavior management reduces disruptive child behavior more effectively than teaching parents behavior management alone. For parenting programs in general this golden couple hypothesis was not supported. This main finding, however, masked counterbalancing results for treatment and prevention settings: adding relationship enhancement to behavior management was associated with weaker program effects in prevention, but with stronger program effects in treatment. Finally, we found no evidence to suggest that adding relationship enhancement to behavior management leads to more sustained effects.

Our findings suggest that parenting programs implemented for either treatment or prevention purposes may require different content. Treatment and prevention often involve meaningfully different families (e.g., Leijten et al., 2013). Families in treatment generally have children whose disruptive behavior problems are more developed; families in prevention generally are community sample families (i.e., universal prevention) or families with risk factors for the development of disruptive child behavior, such as social or economic adversity (i.e.,

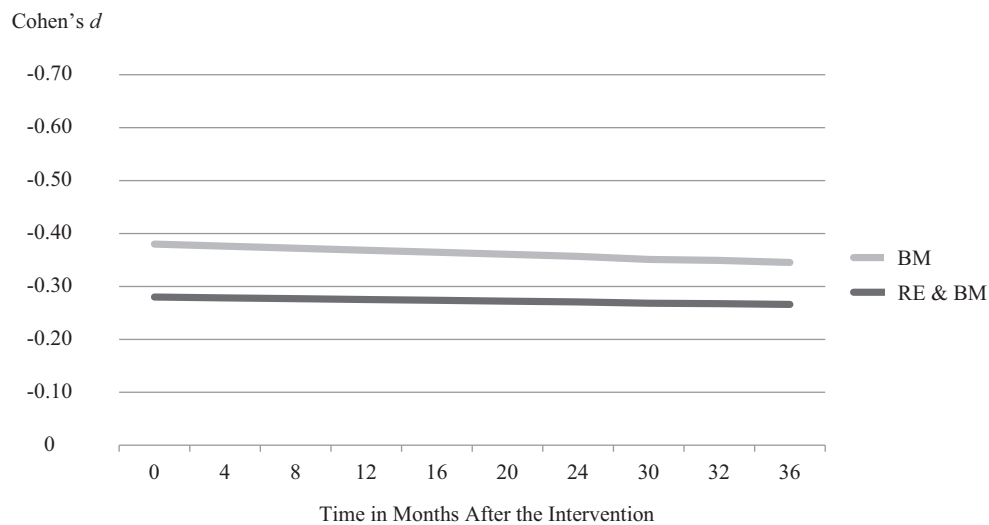


Figure 2. Meta-analysis 2 shows that adding relationship enhancement to behavior management is not associated with more sustained parenting program effects.

Note. BM = programs that teach behavior management only ($k = 22$; $n = 81$); RE & BM = programs that teach relationship enhancement and behavior management ($k = 15$; $n = 62$). k = number of studies; n = number of effect sizes. Because of their small number, the four evaluations of a relationship enhancement only program are excluded from this Figure.

selective prevention). Because families in treatment tend to have children with more severe behavior problems, parent-child relationships in these families tend to be more distressed (Rothbaum & Weisz, 1994). Providing families with relationship enhancement skills in addition to behavior management skills addresses this issue. Specifically, it provides families with tools on how to engage with children in a sensitive in responsive manner, to increase levels of positivity and security within the relationship. Families in prevention settings may not need an additional relationship enhancement component if their parent-child relationships are less distressed. Teaching parents skills that do not match with their needs may not be empowering and might even backfire, for example, by diminishing feelings of self-efficacy (e.g., Risk-Need-Responsivity Model; Andrews, Bonta, & Hoge, 1990).

Parenting programs for disruptive child behavior are empirically among the most well-supported programs to optimize child development (Weisz & Kazdin, 2010). Yet, although parenting program effects are robust across countries (e.g., Leijten, et al., 2016), effect sizes have not increased in decades (Weisz et al., 2017) and many families do not benefit (e.g., Shelleby & Shaw, 2014). Perhaps in an attempt to strengthen program effects, many program developers are adding extra components to their protocols (e.g., Sanders et al., 2004; Webster-Stratton & Reid, 2010). Our findings, and those of others before us (e.g., Bakermans-Kranenburg et al., 2003; van IJzendoorn, Juffer, & Duyvesteyn, 1995), do not support this trend to stack parenting program components. Instead, they call for careful consideration of the components that are needed for each family. This suggests the need for increased targeting or tailoring of programs, or programs that are flexible in the components they offer (e.g., the Family Check-Up; Dishion & Stormshak, 2007). Personalized programs, however, require a better understanding than we now have of the specific parenting behaviors that should be targeted for families with different strengths and difficulties.

In order for any program to be effective, its components should target the core psychological mechanisms that underlie the problem the program is designed to address. Most parenting programs designed to reduce disruptive behavior in early and middle childhood target breaking coercive parent-child interaction cycles (Patterson, 1982). Their approach to achieve this aim, however, is all but specific: most programs comprise dozens of different components (e.g., Garland, Hawley, Brookman-Frazer, & Hurlburt, 2008; Leijten et al., 2015). Our study

is among the first to identify the empirical merit of individual program components, above and beyond the merit of other components. More fine-grained research to identify essential components is needed to distinguish between components that actually contribute to program effectiveness, and components that are ineffective, or superfluous in the light of other components. Moreover, research on the unique and shared mechanisms through which these components shape child development is needed. Understanding the unique and shared mechanisms of different parenting program components will improve our understanding of how different parenting behaviors impact child behavior similarly or differentially, and can guide our efforts to strengthen intervention strategies to reduce disruptive child behavior.

While behavior management and relationship quality are theoretically distinct concepts, they can be difficult to disentangle empirically. In our meta-analysis, theoretical predictions about intervention effects of these distinct components were not always borne out in expected ways. Similarly, researchers attempting to disentangle these two constructs from a measurement perspective have found it to be challenging, with method variance often swamping "trait" variance (Dishion, Li, Spracklen, Brown, & Haas, 1998). For example, Waller et al. (2015) found that different elements of positive parenting, affective and behavior management aspects, loaded on a single factor. These findings suggest the need for developmental science to find ways to improve measurement and theory building.

Strengths and Limitations

Our study answers to calls in the broader field of mental health science to identify the core components of psychosocial interventions (e.g., Holmes, Craske, & Graybiel, 2014). Moreover, we show the importance of distinguishing between treatment and prevention settings when answering questions about core intervention components. Meta-analysis 1 is, to our knowledge, the most comprehensive meta-analysis of randomized evaluations of behavioral parenting programs to date and, with its combined data set of 156 trials and 368 effect sizes, well-powered to compare the effects of behavioral parenting programs with and without a relationship enhancement component. Meta-analysis 2 is relatively unique in its focus on sustained effects. Parenting programs research is crowded in terms of studying the immediate or short-term effects of programs, but very few studies address whether and

why program effects are maintained in the months and years after programs end (Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011).

Both meta-analyses used state-of-the-art methods that enhance power by including multiple relevant effect sizes from each study. In addition, each method has strengths that match with the specific goals of each of the meta-analyses. We used robust variance estimation in Meta-analysis 1 to focus mainly on between-studies variance (i.e., differences in program components). By accounting for inter-correlation within studies, robust variance estimation produced an efficient and consistent estimation of the differential effectiveness of programs with and without relationship enhancement. We used multilevel meta-analysis for Meta-analysis 2 because the studies in this meta-analysis had a more complex hierarchical structure (i.e., effect sizes both from different measures and from different time points). Meta-analysis 2 focused on both between-study and within-study level variance (i.e., change over time). Our analytic strategy allowed for cross-level interactions between time and intervention components that were readily estimated and relatively easy to interpret.

Several limitations of our study merit attention. First, in common with other meta-analyses, we could only examine associations, rather than causal connections, between study characteristics (i.e., program components) and program effects. This is because research that experimentally tests programs with different components against each other within studies is scarce. Relatedly, we only tested the additive value of relationship enhancement to behavior management, not the additive value of behavior management to relationship enhancement. Meta-analysis 2 included studies of programs with all possible combinations of components, but the number of trials in this meta-analysis was too limited to rigorously test other combinations of components against each other. We therefore cannot draw any conclusions on the effects of relationship enhancement alone, or on the added effects of behavior management to relationship enhancement. Second, we relied on parent-reported outcomes of program effects, which are not blinded for condition. Previous meta-analyses, however, indicate that taking a multimethod and/or multiinformant approach hardly changes effect sizes (Menting et al., 2013; van Aar et al., 2017). Third, although 41% of the studies in Meta-analysis 2 ($k = 17$) followed children up to at least 1 year after the end of the program, research on more longer term effects of parenting programs

(i.e., 5 or 10 years later) are scarce. Fourth, we examined the effects of parenting programs on disruptive child behavior only. Parenting programs are increasingly implemented as part of primary health care to target a wide range of child outcomes (e.g., child maltreatment or children’s emotional problems). Our results, however, pertain to the effectiveness of these programs to reduce disruptive child behavior specifically.

Conclusion

We found no overall support for the golden couple hypothesis that integrating relationship enhancement with behavior management is superior to behavior management alone for reducing disruptive child behavior. When we distinguished between treatment and prevention, however, we found that adding relationship building to behavior management yielded weaker effects in prevention settings, but stronger effects in treatment settings. Our findings therefore argue against current practice to implement the same parenting programs in prevention and treatment settings. Instead, a focus on behavior management alone may be more effective in prevention settings, while an integrated focus on relationship enhancement and behavior management may be more effective in treatment settings. More generally, our findings call for a better understanding of the specific parenting behaviors that should be targeted at different stages of the development of disruptive child behavior.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher’s website:

Figure S1. PRISMA Flow-Chart Meta-analysis 1

Figure S2. PRISMA Flow-Chart Meta-analysis 2

Table S1. Included Studies Meta-analysis 1

Table S2. Included Studies Meta-analysis 2

Table S3. Search Strategy Meta-analysis 1

Table S4. Search Strategy Meta-analysis 2

Table S5. Systematic Reviews and Reviews of Reviews Searched to Identify Relevant Studies for Meta-analysis 1