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BRIEF REPORT

## Parenting Group Composition Does Not Impact Program Effects on Children's Conduct Problems

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Many established parenting programs for children's conduct problems are delivered in groups. Various, and at times conflicting, beliefs exist about whether families fare better in groups with parents that are more similar to them, or in groups that are more diverse. We set out to test these beliefs empirically. We integrated data from four trials of the Incredible Years parenting program in the Netherlands, including 452 families (children age 2–10 years) participating in 44 parenting groups. We used multilevel regression to test whether families benefit more (or less) when they participate in a group with parents that are more similar to them in terms of ethnic background, educational level, and children's baseline conduct problems, Attention Deficit/Hyperactivity Disorder (ADHD) symptoms, and emotional problems. In addition, we tested whether relative group position effects were stronger for some families than for others (e.g., whether especially ethnic minority families benefit from groups that are more ethnically diverse). Families with more severe conduct problems benefited more, but they did not fare better (or worse) in groups where other families were more similar to them. Regarding the other group characteristics, families' relative group position did not predict parenting program effects on children's conduct problems. Our findings held across families with different sociodemographic backgrounds and different levels of children's ADHD symptoms and emotional problems. We found no evidence that parenting group composition impacts the effectiveness of the Incredible Years parenting program for children's conduct problems.

*Keywords:* parenting program, conduct problems, therapy groups, group composition

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Group therapy guidelines emphasize the importance of careful group composition (American Group Psychotherapy Association, 2007; Brabender, 2002). A good fit between the individuals in a group contributes to cohesion, self-disclosure, and positive change (Dinger & Schauenburg, 2010; Paulus et al., 2015). However, available theoretical and empirical literature provides contradicting advice on what makes a good fit. In this study, we tested whether families in the Incredible Years parenting program targeting children's conduct problems fare better in groups with parents that are more similar to them in terms of sociodemographic background (i.e., ethnic background and educational level) or the nature of

children's behavior problems (i.e., co-occurring ADHD symptoms and emotional problems).

Parenting programs are an established strategy to prevent and treat children's conduct problems (Leijten et al., 2019; Shaw & Taraban, 2017). Based on evidence that children's conduct problems are often maintained and amplified by coercive interactions in which parents and children unwittingly reinforce aversive behavior in each other (Patterson, 1982), most established programs are specifically designed to break these coercive interaction cycles. These programs support parents to increase positive interactions with their children (e.g., playtime), to reinforce positive child behavior (e.g., praise and incentives), and to avoid negative interactions (e.g., ignoring trivial misbehavior), in order to prevent unintended reinforcement of problematic behavior (Kaehler et al., 2016).

One of these programs is the Incredible Years parenting program (Webster-Stratton, 2001). Incredible Years was developed in the 1980s by Carolyn Webster-Stratton and shares much of its content with other empirically supported parenting programs (see Kaehler et al., 2016, for a review). A distinctive feature of Incredible Years is its collaborative approach. Instead of a didactic approach where therapists teach parents new skills, Incredible Years leaders guide parents in finding

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effective strategies to achieve their personal parenting goals in ways that fit with their values. The Incredible Years parenting program has shown robust effects across settings and countries (Leijten et al., 2016; Menting et al., 2014).

Group programs allow for peer support and feedback, which may normalize parents' experiences and reduce feelings of isolation, and allow for active teaching methods such as brainstorming, discussions, and role-play (Webster-Stratton, 2001). In addition, group programs are a lower-cost alternative to individual programs, while they are not inferior in terms of effectiveness (e.g., Niec et al., 2016). The costs for group program typically range from \$345 to \$1,844, with a median of \$1,168 per family, compared to \$954 to \$7,001, with a median of \$2,578, for individual programs (Bonin et al., 2011).

Beliefs that parenting program effects depend on group composition are widespread, and sometimes lead to the formation of separate groups for parents based on ethnicity or the nature of children's behavior problems. Empirically, however, there is a lack of evidence to suggest that individuals fare better in groups where other families have similar ethnic and educational backgrounds. The feeling of being similar to others provides a basis for relationship building, increasing group identification, and commitment to group goals (Wilson et al., 2018). However, grouping families based on ethnic or educational backgrounds may risk parents to feel stereotyped, and normalizing experiences may be greater when families see that families with different backgrounds experience similar problems (Mørch et al., 2004).

Similarly, parents of children with complex problems sometimes indicate that meeting parents who are in a similar situation was important for their morale and self-esteem (Mørch et al., 2004). Parents may thus benefit more from groups in where other children's problems are similar to theirs, or at least not *less* complex: Some parents experience programs as less helpful when other families experience less severe difficulties (Furlong & McGiloway, 2012). Although the qualitative studies by Mørch et al. (2004) and Furlong and McGiloway (2012) did not examine this directly, parenting experiences such as program satisfaction and increased self-efficacy relate to improved child behavior (Mouton & Roskam, 2015; Sanders et al., 2000). Again, this similarity to other parents may be more important for some parents (e.g., those experiencing more severe ADHD symptoms or emotional problems) than for others. However, findings from other therapies suggest that having participants with milder problems in a group can help model adaptive strategies (Helgeson et al., 2000). Having families in the group that have more positive experiences might be important for the group morale, pleading for more heterogeneity. In the present study, we set out to test such group composition effects empirically. Because little is known about group effects in parenting programs, we did not have any a priori hypotheses about the direction of such effects.

## Methods

### Procedure

Rigorous tests of group composition effects require sufficient numbers of groups from the same intervention program, to minimize confounding program-specific factors, and sufficient variation in group composition. We therefore integrated data from four trials of the Incredible Years parenting program in the Netherlands, including 452 families allocated to 44 groups (Table 1). All trials included

baseline assessments (i.e., within a few weeks prior to the start of the intervention) and immediate posttest assessments (i.e., within a few weeks after the end of the intervention). All study protocols were approved by internal review boards and all parents signed informed consent. Details regarding data integration are published elsewhere (Leijten, Raaijmakers, et al., 2018).

The combined sample included both homogenous and heterogeneous Incredible Years groups, in terms of family background and children's behavior problems (Figures 1a to 1e, included as Supplemental Material). For example, some groups included ethnic majority or ethnic minority families only, while others were more heterogeneous. This variation in group composition was central to our analyses—the ability to identify whether group composition matters depends on this variation.

### Participants

Children ( $N = 452$ ; 40% girls) were between 2 and 10 years old ( $M = 5.79$ ;  $SD = 1.76$ ). Because the majority of data came from one parent per family, we used data from one parent per family for all trials (94% mothers). Parents' highest educational level varied substantially (12% primary school; 23% secondary school; 27% lower vocational training; 26% higher vocational training; and 12% university or postgraduate). A small majority of the parents were of native Dutch descent (61%), other parents had recent family migration histories from North Africa (10%, mainly Morocco); Caribbean (9%); Latin America (5%); Turkey (5%); Europe or Northern America (5%); Sub-Saharan Africa (2%); Asia (2%); or the Middle East (1%). Children's conduct problems encompassed almost the full possible range on the Eyberg Child Behavior Inventory (ECBI; observed range 44–206, on a scale of 36–252;  $M = 127.56$ ,  $SD = 26.97$ ), and so did children's ADHD symptoms on the Strengths and Difficulties Questionnaire (SDQ; 1–10, reflecting the possible range;  $M = 5.36$ ,  $SD = 2.79$ ) and emotional problems on SDQ (1–10, reflecting the possible range;  $M = 3.06$ ,  $SD = 2.35$ ).

### Trials

Trials took place between 2004 and 2013. Trials #1 and #4 sent out screening questionnaires to all families with children in the right age range living in the targeted areas. Trial #2 recruited parents through Dutch detention records. Trial #3 recruited parents through a local outpatient clinic for child mental health problems, and through schools serving culturally diverse neighborhoods. Program delivery was overseen by the same team in all trials, most group leaders delivered groups in two different trials. All trials included baseline assessments (i.e., within a few weeks prior to the start of the intervention) and immediate posttest assessments (i.e., within a few weeks after the end of the intervention).

### Measures

#### *Children's Conduct Problems*

In all trials parents completed the 36-item Intensity Scale of the ECBI measured on a 7-point scale (1 = "never" to 7 = "always") (ECBI; Eyberg & Ross, 1978). Psychometric properties in Dutch samples are adequate (Abrahamse et al., 2015). Internal consistency was  $\alpha = .90$ .

**Table 1**  
*Trial and Family Characteristics*

|  | Trial #1<br>(Posthumus et al., 2012) | Trial #2<br>(Menting et al., 2014) | Trial #3<br>(Leijten, Raaijmakers, et al., 2017) | Trial #4<br>(Weeland et al., 2017) |
|--|--------------------------------------|------------------------------------|--|------------------------------------|
| Number of families (intervention only)         | 72                                   | 74                                 | 109  | 197                                |
| Number of Incredible Years groups              | 8                                    | 6                                  | 16   | 14                                 |
| Child age; <i>M (SD)</i>                       | 4.19 (0.26)                          | 6.21 (2.80)                        | 5.64 (1.37)                                      | 6.30 (1.36)                        |
| Child gender (% boys)                          | 71%                                  | 53%                                | 77%  | 62%                                |
| Educational level <sup>a</sup> ; <i>M (SD)</i> | 3.61 (.85)                           | 1.81 (.96)                         | 2.59 (1.12)                                      | 3.44 (1.03)                        |
| % Ethnic minority                              | 8%                                   | 77%                                | 64%  | 13%                                |
| Baseline conduct problems; <i>M (SD)</i>       | 129.88 (26.98)                       | 110.09 (31.13)                     | 124.17 (33.03)                                   | 133.27 (19.24)                     |
| Baseline ADHD symptoms; <i>M (SD)</i>          | 4.99 (2.80)                          | 4.19 (2.67)                        | 5.61 (2.76)                                      | 5.74 (2.73)                        |
| Baseline emotional problems; <i>M (SD)</i>     | 2.20 (1.76)                          | 2.37 (2.01)                        | 3.22 (2.37)                                      | 3.45 (2.49)                        |

Note. <sup>a</sup>1 = primary education or less; 2 = secondary education; 3 = intermediate vocational; 4 = higher vocational; 5 = university.

### Children's ADHD Symptoms

In three trials parents completed the five-item Hyperactivity and Inattention scale of the SDQ (Goodman, 1997), measured on a 3-point scale (0 = *not true* to 2 = *certainly true*); in one trial parents completed the five-item Inattention Problems scale of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000), measured on a three-point scale (0 = “*not true*” to 2 = “*very true or often true*”). CBCL scores were converted to SDQ scores using norm deviation scores. This means a child's CBCL score was converted to its norm deviation score (i.e., the number of standard deviations the child scores above or below the population mean) using CBCL norm scores (Achenbach & Rescorla, 2000). This norm deviation score was then converted to an SDQ score using SDQ norm scores (National Health Interview Survey [NHIS], 2001). The SDQ and CBCL are both well established for screening ADHD symptoms and the scales correlate well (Goodman & Scott, 1999). Both scales showed good internal consistency in this study ( $\alpha = .78-.80$ ). As predictors of program effects, we calculated the group mean (Level 2) and the deviation of the family score to the group mean (Level 1).

### Children's Emotional Symptoms

In three trials, parents completed the 5-item Emotional Problems scale of the SDQ; in one trial, parents completed the 36-item Internalizing scale of the CBCL. CBCL scores were converted to SDQ scores using norm deviation scores. The internal consistency of the two scales in this study was  $\alpha = .64-.67$ . As predictors of program effects, we calculated the group mean (Level 2) and the deviation of the family score to the group mean (Level 1).

### Ethnicity

Parents in three trials reported their own ethnic background, based on their country of origin. Parents in one trial reported their child's ethnic background. For the parents in this trial (18% of all parents) we estimated their ethnic background based on their child's ethnic background. As a predictor of program effects, we calculated the proportion of other families in the group with a similar ethnic background as the target family.

### Educational Level

Parents reported their highest completed educational level. As a predictor of program effects, we calculated the proportion of other parents in the group that are in the same dichotomized class: Lower educational level (primary and secondary education) or higher educational level (intermediate or higher vocational training, and university).

### Parenting Program

Core components of the Incredible Years program (Webster-Stratton, 2001) include child-led play, positive reinforcement techniques, limit setting, and nonviolent disciplining behavior, and coaching children's emotional, social, and academic skills. The program adopts a collaborative coaching model that uses video vignettes, group discussions, and role-play to encourage parents to come up with their own solutions for challenging parenting situations. In all trials, groups were led by two group leaders, at least one of them Incredible Years certified. Twenty-five percent of the groups had a group leader from an ethnic minority. Program fidelity was monitored by videotaping sessions and discussing these in frequent supervision meetings. Groups were conducted in Dutch. Parents with language difficulties were supported by other parents who helped translating. We offered interpreters, but all parents preferred informal support from other parents. Across trials, 16% of the families allocated to Incredible Years did not attend any session. These families were excluded from the analyses, because they cannot have contributed to group dynamics. Other parents attended on average 68–79% of the sessions.

### Analytic Strategy

We performed multilevel analyses in HLM 6.08 (Raudenbush et al., 2004): Families (Level 1) were nested in Incredible Years groups (Level 2). Covariates were the trial (dummy coded; Trial #4 served as reference), children's baseline levels of conduct problems. First, for families' relative group position regarding ethnicity and educational background, we tested whether the percentage of families in the group with a similar ethnic background, and the percentage of families in the group with a similar educational level, predicted program effects on

children's conduct problems. Regarding children's conduct problems, ADHD symptoms, and emotional problems, we tested whether an individual family deviation from the group mean predicted program effects. Second, to test whether relative group position mattered more for some families than for others, we added the ethnic background  $\times$  percentage of families in the group with the same ethnic background interaction term as a predictor of program effects, and a similar interaction term for educational level. Regarding children's conduct problems, ADHD symptoms, and emotional problems, we tested for each variable (i.e., family deviation from group mean) random slopes at the group level. If these random slopes were significant, we added the cross-level interaction term (i.e., family individual deviation from the group mean  $\times$  group mean) to the model. We used full maximum likelihood estimation. Continuous variables were grand mean-centered and dichotomous variables were dummy-coded. Assumptions were checked and the final model was run both with and without two outliers at the group level and one at the family level, providing similar results for all relevant outcomes. No meaningful power analysis could be conducted because statistical power in multilevel analyses depends on, among other things, differences in group size, effects across groups, and across trials. Many of these parameters are unknown and there currently is no literature to guide estimations of these parameters, or of the magnitude of the expected effects. That said, our analyses are likely to be better powered than those of individual trials, because our combined sample of four trials is substantially larger than that of most individual trials.

## Results

### Overall Program Effects

The main effects of the Incredible Years program on children's conduct problems are reported elsewhere (Leijten, Raaijmakers, et al., 2018). Children's conduct problem scores changed from  $M = 127.56$  ( $SD = 26.97$ ) to  $M = 116.61$  ( $SD = 24.39$ ), a significant change in comparison with the control condition, where scores changed from  $M = 129.33$  ( $SD = 25.11$ ) to  $M = 125.14$  ( $SD = 25.63$ ),  $d = -0.34$  (95% CI =  $-0.49$  to  $-0.19$ ). Groups ranged in size from 3 to 18 families ( $M = 9$ ). The group size was unrelated to program effects linear  $F(1, 336) = 1.63$ ,  $p = .202$ ; quadratic  $F(1, 335) = 1.61$ ,  $p = .202$ .

The ICC of the unconditional model was 0.18 (Step 1 total variance =  $501.45 + 111.92 = 613.37$ , Step 2 variance Level 2/total variance =  $111.92/613.37 = 0.18$ ). There was a significant variance at the level of the 44 groups, with program effects being stronger in some groups than in others ( $\sigma^2 = 96.12$ ,  $p < .001$ ), indicating the importance of studying group characteristics as predictors of program effects. Families' relative group position regarding ethnicity and educational level, and regarding children's baseline conduct problems, ADHD symptoms, and emotional problems, were correlated and therefore included in the same model.

### Families' Group Position Regarding Ethnicity and Educational Level

Families' relative ethnic and educational group position characteristics did not predict Incredible Years parenting program effects (Table 2). This means families did not benefit more in terms of reduced child conduct problems when other families in

**Table 2**

*Relative Position in Group Regarding Sociodemographic Background as Predictor of Postintervention Conduct Problems*

|   | Model 1       | Model 2       | Model 3      |
|---|---------------|---------------|--------------|
| Trial 1                                       | -2.11         | -1.99         | -2.24        |
| Trial 2                                       | <b>-13.45</b> | <b>-13.92</b> | -10.52       |
| Trial 3                                       | -4.30         | -5.36         | -2.61        |
| Conduct problems (baseline)                   | <b>0.58</b>   | <b>0.58</b>   | <b>0.57</b>  |
| Ethnic background (individual family level)   | -3.70         | -2.07         | -6.33        |
| Educational level (individual family level)   | 0.30          | 0.52          | 0.26         |
| Ethnic background (proportion similar)        |               | 4.78          | <b>17.69</b> |
| Educational level (proportion similar)        |               | -2.60         | -3.06        |
| Ethnic background $\times$ Proportion similar |               |               | -23.72       |
| Educational level $\times$ Proportion similar |               |               | -5.91        |
| $\sigma^2_e$                                  | 312.52        | 311.15        | 306.60       |
| $\sigma^2_{intercept}$                        | 0.15          | .13           | 0.14         |
| Degrees of freedom (DF)                       | 9             | 11            | 13           |
| Deviance                                      | 2,368.88      | 2,367.65      | 2,363.59     |

Note. Variances in *bold* indicate significance at  $p < .05$ .

the group had more similar or more diverse ethnic or educational backgrounds. There also were no significant group composition  $\times$  individual family characteristic interaction effects. This means that the absence of group composition effects held for families from the ethnic majority and ethnic minority, and for families with lower and higher educational backgrounds.

**Table 3**

*Relative Position in Group Regarding Children's Baseline Level of Conduct Problems, ADHD Symptoms, and Emotional Problems as Predictors of Postintervention Conduct Problems*

|   | Model 1     | Model 2     | Model 3     |
|---|-------------|-------------|-------------|
| Trial 1   | -1.59       | -1.59       | -1.47       |
| Trial 2   | -7.59       | -7.59       | -7.37       |
| Trial 3   | -1.63       | -1.63       | -1.65       |
| Conduct problems group mean                         | <b>0.94</b> | <b>0.94</b> | <b>0.94</b> |
| ADHD symptoms group mean                            | -1.18       | -1.18       | -1.15       |
| Emotional problems group mean                       | -0.94       | -0.94       | -0.91       |
| Conduct problems deviation from group mean          |             | <b>0.53</b> | <b>0.54</b> |
| ADHD symptoms deviation from group mean             |             | 0.16        | 0.12        |
| Emotional problems deviation from group mean        |             | -0.26       | -0.39       |
| ADHD group mean $\times$ Deviation from group mean* |             |             | -0.09       |
| $\sigma^2_e$  | 475.39      | 318.16      | 311.23      |
| $\sigma^2_{intercept}$                              | 0.20        | 0.19        | 1.20        |
| $\sigma^2_{SDQ ADHD}$                               |             |             | 1.26        |
| DF  | 9           | 12          | 21          |
| Deviance  | 2,477.52    | 2,376.58    | 2,374.63    |

Note. \* Regression coefficient variance was significant for individual family level baseline ADHD symptoms, but not for individual family level baseline conduct problems and baseline emotional problems. This means groups do not differ in their relation between individual family level conduct problems and emotional problems and program outcomes. This means interaction effects could not be added to the model. Variances in *bold* indicate significance at  $p < .05$ .

## Families' Group Position Regarding Baseline Conduct Problems, ADHD Symptoms, and Emotional Problems

None of the relative group position characteristics predicted Incredible Years parenting program effects (Table 3). Families with children with more severe conduct problems at baseline benefited more, both at the group level (groups where the mean level of children's conduct problems was higher benefited more) and at the individual family level (families whose children showed more conduct problems than the average group level). Importantly, however, there was no interaction effect suggesting that families experiencing more conduct problems benefited more from groups whether other families also experienced more conduct problems. Groups where the mean level of children's ADHD symptoms or emotional problems in the group was higher (or lower) did not benefit more, and families where children's ADHD symptoms or emotional problems deviated more (or less) from the group mean did not benefit more. There also was no significant group mean  $\times$  family deviation from the group mean interaction effects. This means that the absence of group composition effects held for families experiencing less or more ADHD symptoms, and for families experiencing less or more emotional problems.

## Discussion

We tested whether families in the Incredible Years parenting program for children's conduct problems fare better when other families in the parenting group are more similar to them in terms of their sociodemographic backgrounds and level of children's conduct problems, ADHD symptoms, and emotional problems. This was not the case. We found no evidence to suggest that parenting group composition predicted how much families benefit. This finding held across families with different demographic backgrounds, and different types of children's problem behavior. In line with earlier findings (e.g., Leijten, Raaijmakers, et al., 2018), we found that families experiencing more severe conduct problems benefited more, but they did not fare better (or worse) in groups where other families were more similar to them.

Our findings contradict some qualitative work that group composition does matter (e.g., Furlong & McGilloway, 2012; Mørch et al., 2004). It might be that some families prefer some groups over others (as picked up by these qualitative studies), but that there are no general "rules" that hold for large numbers of families. Alternatively, it might be that while families prefer some groups over others, these preferences do not translate into program benefits.

The Incredible Years program explicitly emphasizes collaboration and peer support, including weekly phone calls with a peer to support and inspire each other, and the use of positive feedback for the skills parents use in role-plays. These activities may increase group cohesion, independent of families' individual backgrounds, strengths, and difficulties. We cannot be sure that our findings generalize to other established group parenting programs that tend to focus on the same family dynamics, but that often use different delivery methods (Kaehler et al., 2016).

Our findings are reassuring for professionals who need to decide which parents participate together in parenting groups. Based on our findings, no particular efforts need to be made to ensure sufficient levels of homogeneity (or heterogeneity) regarding families' socio-demographic background, or the severity and nature of children's

behavior problems. That said, individual families may have preferences that require consideration. For example, in some communities, parents prefer separate groups for mothers and fathers (Leijten, Raaijmakers, et al., 2017), and parents may be less likely to drop-out if their program delivery preferences are taken into account (He et al., 2015).

Study strengths include our data integration procedures that minimized confounding program factors (by using the same parenting program that was implemented in a similar way in all four trials), and maximized variation in the nature and homogeneity of the parenting groups (by integrating data from groups in outpatient psychiatric clinics to schools serving economically disadvantaged neighborhoods). Study limitations include, first, that we compared the effects of existing groups that varied in their composition—families were not randomized to groups with different compositions. We, therefore, test associations between group characteristics and program effects, rather than causal effects of group characteristics on program effects. Second, although we are, to our knowledge, the first to integrate data from 44 parenting groups, 44 groups is still a fairly limited number, especially to test family by group interaction effects. The recent increase in individual participant data meta-analyses of family intervention effects (e.g., Brown et al., 2018) may allow for replication of our findings in larger pooled samples, and in different family programs. Third, we studied group composition in relation to program effects specifically. Future research should extend this to attrition—parental motivations for engagement and drop-out and the possible role of group composition in this. Attrition is a serious concern in parenting programs: Approximately 25% of parents who are eligible and invited to participate never enroll, and an additional 26% drop-out before completing the program (Chacko et al., 2016). Research on group effects, and quantitative research in particular, is scarce. Yet, many parenting programs use group formats. We hope future research will work toward an evidence base of parenting group composition effects, including other outcomes such as parenting behavior and attrition. This can be done using existing data from intervention trials, integrating individual participant data from multiple trials to increase sample size and variance in group composition if needed.

We hope this study will provide a basis for future research on how group programs for parents can be optimized. Anyone who has ever led a parenting group has noticed that some families seem more comfortable in the group than others. More rigorous investigations on how group composition impacts group processes and individual family outcomes will allow practitioners to make increasingly evidence-informed decisions when assigning families to parenting groups.

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