Birth Order and Change in Interpersonal Strengths:
Differences in Child Outcomes of a Parent Training Pilot Program

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Abstract
Parents who attended five weeks of parent training in the Nurtured Heart Approach completed questionnaires before and after training. The interpersonal strengths subscale from the Behavioral and Emotional Rating Scale II (BERS2) was used to evaluate children’s interpersonal strengths. A repeated measures ANOVA was conducted to compare interpersonal strengths standard scores among four groups based on birth order: singletons, youngest children, middle children, oldest children.

All groups were rated higher at post-training. There was a main effect for birth order. Post hoc analyses indicated a trend toward middle children being rated lower than all other groups. No interaction effect occurred.

Background
The Nurtured Heart Approach (NHA) is a parenting approach created by Howard Glasser based on his experiences working with parents in clinical settings. NHA was designed to be used with clinical child populations. The present study investigates differences based on birth order in interpersonal strengths outcomes of an NHA parent training pilot program.

The presence of siblings may be related to outcomes because NHA techniques demand parental attention. If attention is divided between children, NHA techniques may be less effective. Conversely, the presence of siblings may promote the development of interpersonal strengths. This could occur if siblings apply NHA techniques with each other or as a function of sibling interactions. It is noteworthy that children with older siblings tend to be more adept in interpersonal skills at an earlier age.

Method
Participants
Parents attended one of 24 5-week NHA training courses. Parents identified a specific child by indicating the child’s age (range 1-16). Parents also listed the ages of other children. In the data set, the target children were coded as singletons, oldest, youngest, and middle children.

Measures
Parents completed questionnaires before and after training. Child interpersonal strengths were measured using 15 items from the BERS2 Interpersonal Strengths subscale. The BERS2 Interpersonal Strengths subscale is a nationally normed, strengths-based assessment designed to measure children’s abilities in social interaction.

Parents were instructed to “Rate each statement to the best of your knowledge of your child,” using a scale of 0 (“Not at all like my child”) to 3 (“Very much like my child”). A raw score was computed for each child and was converted to a standard score.

Results
All groups started with relatively low standard scores; all groups increased from pre-training to post-training. For descriptive results, consult Table 1.

Table 1 Descriptive Results

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Pre-training Mean</th>
<th>Approximate Percentile Rank</th>
<th>Post-training Mean</th>
<th>Approximate Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singletons</td>
<td>38</td>
<td>6.68</td>
<td>50</td>
<td>8.08</td>
<td>90</td>
</tr>
<tr>
<td>Oldest</td>
<td>84</td>
<td>6.60</td>
<td>16</td>
<td>9.14</td>
<td>37</td>
</tr>
<tr>
<td>Youngest</td>
<td>46</td>
<td>6.68</td>
<td>16</td>
<td>9.2</td>
<td>37</td>
</tr>
<tr>
<td>Middle</td>
<td>36</td>
<td>5.58</td>
<td>9</td>
<td>8.08</td>
<td>25</td>
</tr>
</tbody>
</table>

Results (Continued)
Within-subjects Results
The results of Box’s Test of Equality of Covariance Matrices were not significant, F (9, 175355) = .96, p = .48, indicating that ANOVA is an acceptable statistical procedure for the data. The assumption of sphericity was met for the data, and the within-subjects effect for change in interpersonal strengths standard score was significant, F (1, 200) = 591.25, p < .001, with a large effect size (η² = .51). There was no interaction effect for group and change in standard score (see Figure 1).

Between-subjects Results
There was a main effect for group, F (3, 200) = 2.85, p < .05. However, the effect size was small (η² = .04). Post hoc comparisons using Tukey’s HSD indicated the largest difference occurred between singletons and middle children, and this result approached significance (p = .06). The difference between older children and middle children also approached significance (p = .06), as did the difference between younger children and middle children (p = .08). Singletons did not differ from older or younger children. Older children did not differ from younger children.

Discussion
Regardless of birth order, children appeared to benefit from parent participation in the program. Children’s strengths and abilities in social situations increased from their initially reported levels, which were substantially lower than the national average (standard score of 10). However, the main effect for group considered alongside the lack of interaction effect suggests that although middle children benefitted similarly, these children may require more targeted focus.

One limitation of this study was the data being exclusively parent report. Thus it is possible that change in interpersonal strengths could be attributed to biases in reporting. Furthermore, the lower ratings of middle children may not reflect actual differences; rather, differences may be due to parent perceptions of middle children.

A second limitation is the total number of siblings not being taken into account. Birth order appears to be related to interpersonal strengths, but perhaps middle children had a greater number of siblings, which could affect parental attention toward middle children. However if this was the case, an interaction effect would be expected, and no such effect occurred.

Despite these limitations, the results of this study suggest parent training in the Nurtured Heart Approach is related to increases in child interpersonal strengths. Comparisons of birth order differences between the information-only control group and the children whose parents participated in training could contribute to understanding the effects of birth order on outcomes of NHA parent training.

Acknowledgments
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