Abstract: The article outlines an evaluation in which multiple attempts were made to negotiate a more powerful program design. Results of a parent education intervention are briefly reported. Lasting change in human behavior requires the application of intense program dosages across ecological systems. Despite these recommendations from behavior change literature, many programs seek quick fixes with low dosage, uni-level interventions. What role should scholars and program evaluators play in informing clients about the duration and intensity required for effective parent education interventions? Implications and questions are presented for others involved in creating powerful behavior change interventions to address complex social issues.

Child maltreatment research indicates that child abuse results in numerous negative outcomes for children and their communities. Children who are abused are at risk for experiencing low self-esteem, reduced self-control, higher levels of aggression and violence, academic and vocational problems, depression, alcoholism, interpersonal problems, and increased likelihood of abusing their own children (Crouch & Milner, 1993; English, 1998; Kohko, 1992; Olds & Henderson, 1989; Wolfe, 1987). Often these problems continue throughout the lifespan (Malinowski-Rummel & Hanen, 1993). Communities also experience hardships caused by child abuse. The immediate cost of child maltreatment is $24 billion per year, with an additional $69 billion per year spent on long-term effects of violence in society (Fromm, 2001).

Many factors contribute to parents’ abusive actions toward their children (McKay, 1994; Olds & Henderson, 1989; Sedlak & Broadhurst, 1996; Vondra, 1990). The socio-ecological model underscores how interactions among individual, family, community, and societal systems contribute to increased levels of child abuse. (Belsky, 1980; Belsky, 1984; Bronfenbrenner, 1979; Culbertson & Schellenbach, 1992). Individual level child abuse risk factors encompass the abuser's personality, knowledge, skills, personal history, and mental health (Blau, Whewell, Gullotta, & Bloom, 1994; Daro & McCurdy, 1994; Ross, 1996; Wagner, 1997).
Family-level risk factors include family dysfunction and conflict; stress levels within the family; and the personalities of children in the family (Seginer, 2006). Community-level risk factors include problematic social networks; academic challenges, which include cognitive dysfunction; stressors associated with employment and socioeconomic status; and lack of accessible social services (Dornbusch & Glasgow, 1996; Seginer, 2006; Wang & Holton, 2007). Culture-level risk factors include attitudes, values, and beliefs about children, discipline, abuse, and violence that permeate the larger culture in which parents live (Berry, 1997).

Community educators working closely with families recognize the interface of the many systems that contribute to risk. A systems perspective is essential to plan effective interventions. The creation of resilient communities, families, and children requires interventions that are powerful enough to effect change across systems.

**Ecological Systems Change**

An ecological systems approach identifies key system relationships that contribute to child abuse and then leverages those relationships to produce change (Foster-Fishman, Nowell & Yang, 2007). One promising systems approach to child maltreatment prevention provides parents with education about child development, family functioning, and community support systems. Besides education and skill-building practice, parent education programs can function as a vital social support resource for parents with higher risk for abusing their children. Teaching parents to obtain and maintain social support is critical to reducing child abuse (Daro & McCurdy, 1994; Koeske & Koeske, 1990). The most effective parenting programs involve both parent and child; are relationship-based; are intense in their design; and include coaching, modeling, and practice components (Valle, Wyatt, Filene, & Boyle, 2006).

Additional programmatic applications are found by referencing the socio-ecological model (Belsky, 1980; Belsky, 1984; Bronfenbrenner, 1979; Culbertson & Schellenbach, 1992; Jakes, 2004; Seginer, 2006). These approaches may include community coalition building to coordinate and support work with families, as well as economic development initiatives to reduce family and community stress. Emerging research indicates that individual level interventions coupled with community- and systems-level interventions create powerful programs to overcome the complexity of issues that lead to child maltreatment (Turner & Sanders, 2006; Sadler & Cowan, 2003). For example, system-level interventions that need to be paired with parent education are housing availability, employment training, healthcare availability and support, community development, and neighborhood safety and cohesion. The key question is what makes an intervention powerful enough to stop abuse and change lives?

The child abuse literature discussed previously clearly suggests that prevention programs must address specific risk factors at various ecological levels. While this may seem daunting for parent education programs, there are many techniques programs can employ. Furthermore, many techniques useful for parenting education programs can address multiple levels of risk factors simultaneously.

**Intensity and Duration**

There is no quick fix to change parent behavior. This is why the literature supports intense intervention (Kumpfer & Alvarado, 1995; Kumpfer & DeMarsh, 1985; Whipple & Wilson, 1996) and sufficient educational duration (Howing, Wodarski, Gaudin, & Kurtz, 1989; Zepeda, Morales, Varela, 2004) while practicing new skills under the supervision of a parent coach (Valle, Wyatt, Filene, & Boyle, 2006; Kaminski, Valle, Filene, & Boyle, 2007). While no set standards for appropriate duration and intensity for parent education programs targeting child abuse exist, it is clear that longer, intensive programs are generally more successful than shorter-term, less intense programs.
In a 12-week learning intervention, it may well take 3-5 weeks for instructors to just break through parent distress or anger to create trust and rapport. For example, Whipple & Wilson (1996) found that parents who participated in intense programs (i.e., those that addressed many risk factors and had several contacts per week with parents) that continued for 2 years had better outcomes than parents who participated in shorter, less intense programs.

Although intensity and duration are both important, studies suggest that intensity is the more important of the two factors (National Committee to Prevent Child Abuse, 1992; Whipple, 1999). Further, research suggests that parents benefit most from programs that provide some type of contact (e.g., classes, home visits, phone calls) at least four times per week and those that last at least 6-8 months (Whipple & Wilson, 1996; National Research Council, 1993; Whipple, 1999). One way to increase intensity is to focus on comprehensive interventions with multiple contacts that target factors affecting parenting at the individual, family, and community levels. For example, comprehensive approaches may include parent education, school support, supervised parent-child skill building practice, and workplace stress reduction classes.

**Methods**

To reduce continued court intervention and address parents' abilities to manage their lives and their children, parenting education was identified as a critical outreach strategy. A large child abuse prevention agency contracted with a team of university faculty for evaluation assistance with an intervention to reduce parent abuse of children in an urban county.

The evaluation team, program administrators, and parent educators met to establish evaluation goals and design an evaluation plan with consistency between the program and evaluation outcomes. The primary task was to track knowledge gain and behavior change of parents referred by courts for parenting education. Evaluators presented a literature review to the program delivery team and advised that intervention should occur at multiple system levels (individual, family, and community) focusing on system interactions. These included (individual) attitude, knowledge about child development, parental expectations of children, child management techniques learned, (family) improved communication skills with their families, fewer dysfunctional family interaction patterns, improved anger or stress management techniques, and (community) improved social relationships within and outside families. The program team created a 12-week curriculum they wished to test as an educational intervention. This curriculum would require parents to meet once a week for 2-hour classroom-style parenting instruction.

Recommendations from the evaluation team that the intensity of the program be increased prompted program administrators to create or provide technical assistance to existing parent education coalitions in the target communities. Six community parent coalitions were targeted to expand parent education offerings in the community and to provide social support for the parents in the treatment group. The evaluation team planned to evaluate these groups' progress using the Community Linkage Scale, a measure of group cohesion, structure, and collaboration. The community parent coalition leaders were contacted at the beginning of the treatment period and one year later.

The program evaluators hypothesized that there would be no difference between the parents in the 12-week treatment group and the control group because treatment duration and intensity, or dosage, were insufficient to be effective. The program team hoped that the addition of community coalitions would positively tip the impact of the intervention.
Participants

The treatment group consisted of court-mandated parents participating in a required 12-week parenting education program. Parents were referred to the program through the courts, the department of social services, and through the foster care program. The control group was comprised of court-mandated parents on the program waiting list. Both parent groups completed Child Abuse Risk Factor (CARF) surveys and telephone interviews.

Measures & Procedure

The Child Abuse Risk Factor (CARF) survey assesses parents’ child abuse risk by measuring parental stress, parental expectations of children, social support, attitudes towards children, communication, family interactions, knowledge of child development, and child management. The survey also contains 13 standard social desirability items (Crowne & Marlowe, 1964) to help researchers determine whether survey participants are responding to questions honestly. The CARF, developed specifically for this evaluation project by adapting questions from existing surveys, includes 45 items that participants rate on a scale from 1 to 10, with a score of 1 being completely true and a score of 10 being completely false. Sample items from the CARF include, "I don't have anyone to turn to for help when things get tough;" and "It is normal for 4-year-old children to ask their parents a lot of questions."

To establish reliability and validity, the CARF survey was concurrently administered to a group of parents not considered a high-risk group. Pre-test means were compared among three groups: the non court-referred parents, court-referred treatment parents, and court-referred non-treatment control parents. Analyses of Variance were run to test for significant differences among the group means, and multiple comparison analyses (Tukey and Sheffe methods) were conducted to explore the nature of any differences. Only pre-test means were compared in this manner to determine equivalence among the three groups. It is important to note that with the CARF survey, a higher score indicates a greater presence of risk. Based on factor analysis of the subscales, child management was dropped because subscale items did not collectively measure child management techniques; and parental knowledge and expectations were combined to create a child development subscale. The revised total scale had good reliability (Cronbach's alpha = .79), establishing the CARF survey as a consistent measure of child abuse risk.

Treatment group participants completed the Child Abuse Risk Factor (CARF) survey at the beginning of the program (pre-test) and again at the end of the program (post-test). The treatment group parents were also interviewed by telephone at the beginning of the program and at the end of the program. The control group (wait-listed parents) completed the CARF survey approximately 12 weeks prior to program initiation (pre-test) and again when they started the educational program (post-test). Control group parents were also interviewed by phone at pre-test and post-test. Telephone interviews and survey data was completely anonymous to comply with Human Subjects criteria and to encourage honest responses from participants.

Pre- and post-telephone interviews consisted of 18 open-ended questions based on the same dimensions measured by the CARF survey: stress, parental expectations of children, social support, attitudes towards children, communication, family interaction pattern, child development, and child management. The interview questions, designed by the evaluation team to provide qualitative support for the CARF, were pilot-tested with a focus group of participants from the program who were not in the evaluation group. The evaluation team then revised the questions based on focus group feedback.

As part of the overall evaluation plan, parent education community coalitions were contacted and interviewed both pre-intervention and 1 year later using the Community Linkage Scale. The Community
Linkage Scale assigns community groups to one of five levels based on their collaborative structures and processes. An organization is considered a level 1 if the organization has a loosely affiliated network with no formal structure. An organization is considered a level 5 if the organization has ongoing funding, staff, merged resources, and a formal collaborative structure (adapted from Bergstrom, A., Clark, R., Hogue, T., Perkins, D., & Slinski, M., 1995). (Note: Most collaborative efforts are a level 1-3; there are very few community groups that would classify as a 4 or 5.)

Analysis

The final sample included 64 participants in the treatment group and 43 in the control group. Participants' pre-test surveys and interviews were paired with their post-test surveys and interviews to determine whether there was any change from pre to post-test. No significant change was predicted for the parents in the treatment group. The treatment data from the CARF survey were analyzed using a Repeated Measures Analysis of Variance (ANOVA), with social desirability as a covariate. This analysis explored the differences from pre-test to post-test on the variables of interest while controlling for different levels of social desirability. Because this was an exploratory study using a null hypothesis, results are reported as at an alpha-level of .10. Higher CARF scores indicate a higher degree of risk. Low scores are desirable, and reductions in score suggest improvement. Each pre-post test analysis was then compared to a qualitative analysis of the interview data. The final interview data set yielded 52 pre-post test pairs of treatment interviews and 40 pre-post test pairs of control interviews.

Results

The variables of parent attitude, parent knowledge of child development, child management techniques, communication skills, family dysfunction, social support, and stress were analyzed comparing pre-post results with the interview data to seek confirmation between data sets. Tables 1 and 2 outline the ANOVA results. The evaluation plan called for combining quantitative data with qualitative data to strengthen results. The parents in the treatment group demonstrated significantly more positive growth in communication, stress management, and social support than parents in the control group.

Table 1.
Means and Standard Deviations for All Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Treatment Pre M (SD)</th>
<th>Treatment Post M (SD)</th>
<th>Control Pre M (SD)</th>
<th>Control Post M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent attitude</td>
<td>3.06(2.36)</td>
<td>2.43(1.45)</td>
<td>2.21(1.03)</td>
<td></td>
</tr>
<tr>
<td>Parent knowledge</td>
<td>5.31(4.36)</td>
<td>4.97(3.54)</td>
<td>6.07(4.63)</td>
<td>4.81(4.42)</td>
</tr>
<tr>
<td>Child management</td>
<td>NA*</td>
<td>NA*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>6.81(4.13)</td>
<td>6.07(4.85)</td>
<td>6.81(4.13)</td>
<td></td>
</tr>
<tr>
<td>Family Dysfunction</td>
<td>12.63(6.53)</td>
<td>11.22(6.87)</td>
<td>9.88(7.96)</td>
<td>10.24(7.43)</td>
</tr>
<tr>
<td>Social Support</td>
<td>21.38(11.50)</td>
<td>19.08(11.39)</td>
<td>18.07(11.34)</td>
<td>16.00(11.18)</td>
</tr>
<tr>
<td>Stress Management</td>
<td>28.69(10.93)</td>
<td>24.39(11.18)</td>
<td>24.71(11.41)</td>
<td>23.33(11.41)</td>
</tr>
</tbody>
</table>

* Scale did not adequately measure child management. Note that a higher mean indicates a greater presence of risk.

Table 2.
Percent improvement and ANOVA for Treatment and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Treatment % of Parents Improved</th>
<th>Control % of Parents Improved</th>
<th>Treatment ANOVA</th>
<th>Control ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent attitude</td>
<td>16</td>
<td>9</td>
<td>F(1,62) =1.32, p=.26</td>
<td>F(1,40) =.20, p=.66</td>
</tr>
<tr>
<td>Parent knowledge</td>
<td>33</td>
<td>37</td>
<td>F(1,62) =1.13, p=.29</td>
<td>F(1,39) =.16, p=.69</td>
</tr>
<tr>
<td>Child management</td>
<td>NA*</td>
<td>NA *</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Communication</td>
<td>31</td>
<td>35</td>
<td>F(1,56) =2.84, p=.10</td>
<td>F(1,39) =.07, p=.80</td>
</tr>
<tr>
<td>Family Dysfunction</td>
<td>44</td>
<td>30</td>
<td>F(1,62) =1.66, p=.20</td>
<td>F(1,40) =.07, p=.79</td>
</tr>
<tr>
<td>Social Support</td>
<td>42</td>
<td>42</td>
<td>F(1,62) = 4.71, p = .03</td>
<td>F(1,40) = 1.89, p = .18</td>
</tr>
<tr>
<td>Stress Management</td>
<td>45</td>
<td>30</td>
<td>F(1,62) =2.74, p=.10</td>
<td>F(1,40) = .26, p = .61</td>
</tr>
</tbody>
</table>

* Scale did not adequately measure child management

The results of the parenting education intervention are mixed. Both quantitative and qualitative data suggest that the program contributed to improvements among participants in several of the targeted risk factors, including communication, anger, and stress management. Differences in social support emerged in both quantitative and qualitative data. Interviews with parents suggest parents felt more supported while participating in the program and felt they had learned, among other things, alternative ways to manage stress by taking positive action.

Results for community linkages were equally mixed. As Table 3 depicts, the majority of the linkages showed no change between the pre- to post-tests. Two collaborative groups reported post intervention that the technical assistance was ineffective. Two collaborative groups reported post intervention that their community group was working together more intensely than prior to the intervention. One community group reported that they were working together less than they were prior to the intervention.

Table 3.
Linkage Scores on Community Linkage Scale Pre and Post Intervention

<table>
<thead>
<tr>
<th>County/Linkage</th>
<th>Baseline Linkage Level</th>
<th>1-Year Follow-Up Linkage Level</th>
<th>Change in Number of Members</th>
</tr>
</thead>
</table>

6/10
### Discussion and Implications

As expected, the 12-week intervention achieved mixed results. Treatment group parents evaluated the 12-week series as helpful and felt supported. Evaluators noted that support arose as an outcome and was an expected effect of the weekly support group process. However, the program as structured was not powerful enough to effect significant changes in most other measured risk factors for child abuse assessed in this study.

From the project onset, the importance of concurrently working across multiple systems and increasing dosage was stressed with program managers. Previous studies have shown high dosage, multiple system interventions to be more powerful and to yield significant results. In the end, the community level coalitions that received the technical assistance were not critically linked to the parent education course. Thus, the impact of the community-level coalitions on family educator - community support interactions were reduced. The program intervention strength may have increased had it targeted as many risk factors at as many levels as possible (Daro & McCurdy, 1994; Olds, & Henderson, 1989). The more risk factors a program addresses, the greater the chance the program will successfully reduce or prevent child abuse (National Research Council, 1993).

Although this program had an impact on a few critical risk factors, it was not robust enough to affect key system levers to effect change. The program evaluation found no quantitative change in parent knowledge of child development. Further, this program provided few opportunities for parents to practice new skills because children had been removed from their homes in most instances. Recent studies (Valle, Wyatt, Filene, & Boyle, 2006) point to the need for parents to have opportunities to practice newly learned skills. Without practice of skills associated with building a positive relationship with their child, it was difficult to change their attitude toward or change their critical interactions with their children.

Application of the socio-ecological model requires parent education programs seeking to reduce parents' risk for child abuse behavior to partner and work with additional community agencies and family support programs. Research suggests community involvement and collaboration among various agencies is important to the success of parent education programs. Additionally, parent education program participants benefit when support organizations work together (Olds, & Henderson, 1989). For example, if a parent who enrolls...

<table>
<thead>
<tr>
<th>County 1&amp;2, site A</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>County 1&amp;2, site B</td>
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</tr>
<tr>
<td>County 1&amp;2, site C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County 1&amp;2, site D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County 3</td>
<td></td>
<td>No post data</td>
<td>No data</td>
</tr>
<tr>
<td>County 4</td>
<td></td>
<td></td>
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<tr>
<td>County 5</td>
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<td></td>
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<tr>
<td>County 6</td>
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</tbody>
</table>
in the parent education program is dependent on alcohol or other drugs, it is important to refer that parent to appropriate treatment or support groups. If another parent needs assistance with locating employment, a referral to the local employment agency may be appropriate. Systematic referrals and follow-up on these referrals is critical. Multi-systemic programs not only work across systems, these programs also increase the intensity of the overall intervention.

Based on the findings from this project, the evaluators concluded that the program duration and intensity were only strong enough to have a positive effect in areas of communication, stress management, and social support. However, without any further follow-up assessments with the parents, evaluators were unable to determine whether these effects were sustained or whether removal of the program intervention weakened the perception of social support. Future practitioners may recommend that parents continue to serve as a support system for each other once the intervention ends. If available, practitioners may also move parents into other community programs to extend and reinforce learning and support beyond the 12-week intervention. Further, practice of new skills with children once they are returned to the family is critical.

Even with an established significance level of .10, few significant results were sustained in this single level, low-dosage program. As evidenced through this project, prevention programs must incorporate best practices while collaborating with research partners to identify critical levers of change, continuously refresh knowledge about those levers, and obtain necessary resources to provide multi-systemic interventions with the duration and intensity required to create safe supportive family environments.

References


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