

## Teaching Residents about Child Neglect and Parental Alcoholism: A Controlled Pilot Study

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**Abstract: Objective:** To assess in pediatric residents the effects of a case-based educational exercise about child neglect and parental alcoholism on their knowledge and attitudes.

**Design:** Quasi-experimental controlled trial of a standardized educational intervention and qualitative analysis of residents' reactions.

**Setting:** Resident continuity clinic conferences at a large pediatric teaching hospital.

**Participants:** Convenience sample of pediatric residents (n=37). The residents in the control group received no intervention at all, while residents in the intervention group received the educational intervention.

**Intervention:** A structured, 40-minute case discussion ("*The Silent Cry*") facilitated by trained faculty.

**Main Outcome Measures:** Learner ratings of materials and methods. Pre/post change in scores on a knowledge quiz and attitude scale. Codes and themes generated from qualitative analysis of focus group transcripts.

**Results:** Intervention group residents rated the experience highly. The two groups did not differ significantly in mean pre-post change on the knowledge quiz or attitude scale. Focus group discussions revealed feelings of frustration and powerlessness when dealing with child neglect and parental alcoholism.

**Conclusions:** While this standardized educational intervention was well received by residents, more time is needed for discussion and multiple teaching sessions may be required. Discussion of emotional responses should be included as a standard part of the educational experience.

**Keywords:** Medical Education, Child Neglect, Substance Abuse, Pediatrics

Children of alcoholic parents are at risk for having problems ranging from serious medical conditions to significant psychosocial difficulties. These problems include fetal alcohol syndrome, sleep disturbances, gastrointestinal complaints, headaches, fatigue, decreased appetite, anxiety, depression, and conduct disorders.<sup>1-3</sup> School problems are especially common. Compared with other youngsters, children of alcoholics have decreased attention and higher rates of learning difficulties, misbehavior, suspensions, truancy, absenteeism, and grade retention. In addition, these children are also at risk for developing alcohol disorders themselves when they grow older.<sup>4</sup> Research shows that substance use is a risk factor for child maltreatment<sup>5-7</sup> and is a strong predictor of child neglect.<sup>5</sup>

Residency training is an optimal time to teach pediatricians about early recognition strategies and techniques for screening have been proposed.<sup>8</sup> The American Academy of Pediatrics has endorsed guidelines highlighting the importance of the pediatrician's role in the prevention and management of substance

abuse among patients and their families.<sup>9</sup> In addition, researchers have outlined core competencies for the involvement of health care providers when caring for children and families with substance abuse problems.<sup>10</sup> However, research shows that pediatric trainees receive minimal formal education in the areas of alcohol and drug disorders.<sup>11,12</sup> Thus, it should not be surprising to find that many pediatricians are poorly equipped to identify and respond to families who may be affected by substance abuse.<sup>13</sup>

We began a project in 1996 whose goal was to develop a standardized case-based curriculum to enhance resident education on development, behavior, and psychosocial problems.<sup>14</sup> One of the cases developed, "*The Silent Cry*", addressed child neglect and parental alcoholism. The goal of this particular case teaching module was to provide clinicians with a basic understanding of how to manage child neglect and parental alcoholism. The module included a 3-part patient narrative, reference list, teaching guide, and handouts. Upon completion of the educational module, participants were expected to have been able

to: 1) list signs and symptoms of child neglect; 2) discuss how to communicate concerns to parents who are abusing alcohol (or drugs); 3) describe a management plan for situations where child neglect is suspected; and, 4) list appropriate multidisciplinary services for families affected by substance abuse.<sup>15</sup> The objective of the current study was to assess the responses of pediatric residents to “*The Silent Cry*” case using both quantitative and qualitative methods.

## Methods

The study design included a prospective, quasi-experimental controlled pre-post intervention trial of the standardized case discussion intervention and a qualitative analysis of trainees’ responses to the intervention. The setting was a resident continuity clinic at a large pediatric teaching hospital in Boston, MA. The participants were a convenience sample of pediatric residents, post-graduate years 1 to 4, attending pre-clinic teaching conference. Upon entering the residency program, residents are randomly assigned a particular day for their continuity clinic session and attend a 45-minute teaching conference on a variety of core pediatric topics each week before clinic begins.

We prepared a multiple choice knowledge quiz consisting of 12 items, each corresponding to key teaching points in the educational exercise (e.g., “Which of the following can be provided by the state protective services agency? a) parenting classes, b) parent aide, c) counseling, d) all of the above”). We also developed a 16-item attitude measurement, which included 11 items from the *Substance Abuse Attitude Survey* (SAAS).<sup>16</sup> These selected items from the SAAS were chosen based on their specific relevance to our topic. While not all of the items have a right or wrong answer, a high percent score on our attitude measure can be interpreted as an attitude that is nonstereotyping, nonmoralistic, and optimistic about treatment outcomes. All measures were pilot tested to assess item clarity and presentation. An 11-item case evaluation form, adapted from The Bright Futures curriculum project<sup>14</sup>, was used to assess the residents’ ratings of the quality of the case materials, adequacy of topic covered, usefulness of session, appropriateness of time allotted for discussion, facilitator effectiveness, and likelihood that the intervention would change their practice patterns. Residents rated each item on a five point Likert-type scale.

Three faculty members with experience in structured case teaching served as facilitators of the educational sessions. A different faculty member was assigned to each of the three clinic days that the in-

tervention was given. Facilitators were blinded to the content of the knowledge and attitude measurements. Facilitators used the standardized materials to teach residents at pre-clinic teaching conferences on 3 consecutive days--Monday through Wednesday, during the Thanksgiving holiday week. Residents completed the knowledge and attitude assessments immediately before and 2-3 weeks after the session. Residents assigned to the Thursday and Friday clinic sessions served as the controls. The week prior to Thanksgiving and 2-3 weeks later, residents in the control group completed the assessment battery immediately before their respective clinic sessions and therefore, did not receive an educational intervention. Residents from both groups received a \$25 merchandise certificate as compensation for their time. The hospital institutional review board approved the study protocol.

All data were entered twice into Microsoft Access 97<sup>®</sup>, (Microsoft, Redmond, WA) by two different research collaborators. The dual files were compared to identify entry errors and discrepancies were reconciled by checking the original data source. The cleaned dataset was then imported into SPSS v9.0<sup>®</sup> (SPSS Inc., Chicago, IL) for analysis. Frequencies of all variables in the cleaned dataset were then computed. Knowledge and attitude scores were computed as percentage of total possible score. Because the data distributions were not normally distributed, data were analyzed using both parametric (Students T test and Analysis of Covariance) and non-parametric (Wilcoxon Signed Rank and Wilcoxon Rank Sum tests) methods for pre-post and between groups comparisons, respectively. Results did not differ substantially by any of the above analysis methods, and the non-parametric analysis is reported here, as it was deemed most appropriate for the frequency distributions observed. Mean scores of the rating scales were computed. Responses to the open-ended questions were entered as text variables and tabulated.

All residents who received the intervention were invited to participate in a 1-hour focus group four months after the session to discuss their reactions to the case and the teaching session. The four month interval was the earliest time that the session could be logistically scheduled. We asked this convenience sample of residents both general and specific questions about the teaching case to assess what they found most helpful (e.g., “What did the case teach you about child neglect? Parental alcoholism?”; “What aspect of the case content would you change?”). Other questions asked participants to reflect on their feelings and reactions to the case (e.g., “What emotions did the case raise about the

**Table 1**  
**Mean Likert Ratings of Residents' Ratings of the Case Teaching Experience**

Item	Mean +/- S.D. Rating*
<i>The topic was covered adequately</i>	4.2 (+/- 0.4)
<i>The session was useful</i>	4.3 (+/- 0.5)
<i>The quality of the case materials was excellent</i>	4.2 (+/- 0.6)
<i>The facilitator was effective</i>	4.6 (+/- 0.5)
<i>There was enough time for discussion</i>	3.5 (+/- 1.0)
<i>I am likely to change my clinical practice as a result of the case intervention</i>	4.0 (+/- 0.8)

\*1=Strongly Disagree; 5=Strongly Agree

topic of child neglect? Parental alcoholism?"). Residents who attended the focus group provided informed consent and received an additional \$25 merchandise certificate as compensation for their time.

The principal investigator (CW) facilitated the focus group and a research assistant recorded field notes regarding observations of the five participants. Residents' comments were audiotaped and transcribed for analysis. The transcript and audiotape were compared and discrepancies clarified. An independent researcher (KK) and the principal investigator evaluated the transcript and outlined common themes raised by the focus group participants. Differences in coding were resolved through discussion and by review with a co-investigator (JK).

## Results

Of 37 residents who agreed to participate, 25 (68%) completed both pre- and post-test materials. The completion rate for the intervention group was 14 of 18 residents (78%) and for the control group was 11 of 19 residents (58%). Of the 14 residents (PGY1=7, PGY2=4, PGY3=3) in the intervention group, 8 (57%) were female and 6 (43%) were male. Of the 11 residents (PGY1=5, PGY2=2, PGY3=3, PGY4=1) in the control group, 6 (55%) were female and 5 (45%) were male. Residents were reasonably distributed across groups, given the small cell size, and there was no statistically significant difference with regards to gender or level of training.

**TABLE 2**  
**Codes Generated from Focus Group Transcripts and Exemplar Quotes**

<b>CASE DISCUSSION EXPERIENCE</b>	
Discussion topics	<i>We spent time talking about how to talk to parents; We went through resources available to help you.</i>
Availability of time for discussion	<i>Time was limited; it was almost too much and went too fast to get it.</i>
Questions remaining	<i>How would you start the conversation with this parent? When you're worried about neglect, what can you do while you have the family in the office?</i>
Case feedback (content)	<i>This was definitely a useful way to approach the mom about a certain incident that you were concerned about; the case is so good.</i>
Suggestions for change (format)	<i>Spread the case over two sessions or even separate cases; use a lot of little cases.</i>
Emotional Reactions	<i>I remember it being very sad and frustrating because there's not an easy solution to the problem.</i>
<b>PARENTAL ALCOHOLISM</b>	
Parental alcoholism screening	<i>I ask every parent about smoking, about a gun in the home, yet I don't ask about alcoholism—I'm afraid of the knowledge I'm going to get; parents are put on the defensive if you ask about alcoholism; it's uncomfortable for you [MD] to ask and it's uncomfortable for the person [parent] to answer.</i>

**TABLE 2**  
**Codes Generated from Focus Group Transcripts and Exemplar Quotes (Cont.)**

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Effects of alcoholism on family	<i>There's increased risk for home violence when there's drinking in the home; parental alcoholism does impact the child.</i>
<b>CHILD NEGLECT</b>	
Issues regarding diagnosis	<i>Although neglect is different from poverty, if a patient misses an appointment or isn't in Headstart yet, it's hard to know how much of it is neglect and how much of it is poverty.</i>
Mandated reporting	<i>The feelings of fear that we have in filing is that the parents are going to become very angry.</i>
<b>PARENTAL ALCOHOLISM AND CHILD NEGLECT</b>	
Interventions	<i>There wasn't anything that you could hammer on and say, 'here are five things we need to look at. This one we are going to address right now, and these things we will do for the other four'.</i>
Outcomes	<i>It is sort of mind-boggling, all the stuff that you need to be able to go through to get to a good end point. It's such a long process; you might be able to screen but is that going to be positive? Just so many steps along the way, and ... even after all that maybe nothing will be different.</i>
Availability of Time	<i>It was like opening up a Pandora's box because there was so much that needed to be addressed. Yet, nothing could be addressed quickly.</i>

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At baseline, the pre-test scores on the knowledge measure for the two groups did not differ significantly (median % correct intervention=66.6 vs. control=58.3;  $p=0.60$ ). Neither group's knowledge score increased significantly from pre-test to post-test (intervention pre=66.6; post=75.0;  $p=0.06$  vs. control pre=58.3; post=66.6;  $p=0.34$ ). The median change in knowledge was the same for both groups (intervention=8.3 vs. control=8.3;  $p=0.34$ ). At baseline, the pre-test scores on the attitude measure for the two groups did not differ significantly (median % total score intervention=82.8 vs. control=73.4;  $p=0.24$ ). There was no change in attitude score from pre-test to post-test for either group (intervention pre=82.8; post=79.6;  $p=0.15$  vs. control pre=73.4; post=75.0;  $p=0.59$ ).

Twenty-three residents completed evaluation forms. Mean ratings, based on a 5-point Likert-type scale (1=strongly disagree; 5=strongly agree), are presented in Table 1. The majority of the mean ratings were high. The only rating below 4 was in response to whether there was sufficient time for discussion during the actual teaching session. Residents also reported a high likelihood that they would change their clinical practices as a result of the educational intervention.

Of the 14 residents who received the intervention, five volunteered to participate in the focus group session. The themes generated from analysis of the

transcript spanned four categories and are presented in Table 2.

### Discussion

This study shows that a single case-based educational exercise may not have significant effects on residents' knowledge and attitudes as measured by standard multiple forced choice response assessments. We are somewhat surprised that residents' knowledge quiz scores did not increase more as a result of the intervention. This may have been due, in part, to our small sample size. However, the focus group participants provided insight into another possibility. Although the case materials were well received, residents felt that there was too much information for them to fully process. This is likely a factor contributing to the lack of a significant increase in quiz scores for the intervention group. The higher knowledge scores for both groups on the post-test assessment suggest that there may have been a practice effect or learning that occurred as a result of the assessment itself. This possibility emphasizes the importance of having a control group in educational studies and is particularly relevant since our prior two studies analyzing the effectiveness of other standardized case materials did not use a control group.<sup>14</sup> Regarding the attitude measure, residents may have been able to perceive the "socially desirable" responses, creating artificially high scores on both pre-test and post-test.

The focus group results provided a qualitative, broader view of residents' attitudes that the written assessment was unable to uncover. Given the strong link between attitudes and behavior, it is desirable to attempt to understand residents' true feelings about parental alcohol use. Physicians' attitudes regarding alcohol prevention may influence their provision of screening and education services to their patients.<sup>17</sup> While we would not necessarily expect a single 40-minute intervention to change residents' attitudes or behaviors, we would hope that such an intervention would provide residents with a management strategy for approaching this complex issue and a forum for future discussions about this sensitive topic. It is quite likely that repeated, parallel, educational experiences are needed to increase the likelihood of effecting a true change in attitude. And, realistically, we must recognize that some attitudes may never change despite the intervention.

Limitations of the study can be divided into methodologic and intervention-based. With regard to methodology, there is the issue of validation of the assessments. That is, the knowledge assessment tool was not previously validated and the previously validated attitude assessment was changed for purposes of the study. Trainer effect is another limitation that we must consider. Although we held an orientation session with the three separate faculty trainers to maximize consistency in how the intervention sessions were conducted, we cannot exclude individual differences in their effectiveness as teachers. In addition, the principal investigator acting as the focus group facilitator could introduce bias. However, in an effort to minimize this effect, a structured discussion protocol was used to guide the material covered in the session. There is also the issue of the small sample size that limits the ability to detect differences between the groups. However, this is a preliminary study. A larger study is needed to conduct a more meaningful analysis of the groups. The potential for self-selection bias is another potential limitation. That is, participants with a reasonable knowledge of and interest in the topics presented may have been more inclined to complete the study, thereby minimizing the differences in pre/post test scores. Similarly, the low number of participants in the focus group could represent a biased sample and their views may not be consistent with those who chose not to participate.

In many ways, the small sample size reflects the challenge of conducting research in medical education. Some of the strategies that we used to maximize resident participation included reminder phone calls, assistance from a research assistant to collect

pre- and post-test materials, review of the clinic schedule to determine the expected number of residents who would be present in clinic, and discussions with the clinic coordinator to determine the most effective mechanism to conduct the study in the resident continuity clinic. Despite this, there were interruptions that were not easily controlled, such as residents' tardy arrival, sounding pagers requiring a response, and the ongoing reminder of the anticipated busy clinic session as indicated by the stacks of patients' charts in the conference room where the intervention was conducted. However, in truth, these are all realistic occurrences and serve as tangible barriers to resident education.

It was not surprising that the study had low power. Because most studies of curricular change require development of new measurements with unknown means and standard deviations, it is often impossible to estimate power ahead of time. In our study, retrospectively, a total of 354 participants would have been needed to achieve 80% power to detect with 95% confidence a mean difference of 4.5% (the observed increase), given the mean change scores and standard deviations of the intervention and control groups in this study. This greatly exceeds the number of residents in the entire residency program. Nonetheless, the qualitative comments by the residents suggest that the intervention was effective in providing a structure to address the complex psychosocial problems of parental alcoholism and child neglect.

With regard to intervention-based limitations, multiple interventions on any one particular topic may be needed to appreciate a significant difference in attitudes, given that they are influenced by several factors such as personal experience, mood, available resources, and time constraints. In medical education, important health problems are commonly addressed with one, often brief, intervention. If medical education is to seriously tackle these topics, this study suggests that a better model might involve a more prolonged series of such interventions.

## Conclusions

We conclude that this case-based discussion on child neglect and parental alcoholism is well received by residents and served to reveal a range of emotions that may influence their ability to identify and address these important problems. To effect change in knowledge and attitude, multiple sessions may be needed to reinforce important clinical teaching points and allow residents the opportunity to process their feelings and concerns. This study suggests that, for

some topics, case-based facilitators should ask about feelings and emotions as a standard part of the discussion provided that they are prepared to process these feelings appropriately and constructively. Consistent, thorough discussion of residents' anxieties can potentially ease their fears and contribute to a renewed confidence to appropriately intervene when faced with situations of child neglect and/or parental alcoholism.

#### Author's Note:

Copies of the complete case teaching module, "The Silent Cry", can be downloaded (free of charge) from the worldwide web at: <http://www.pedicases.org>

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