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Child-Adult Relationship Enhancement in Primary Care: A Randomized Trial of a Skill-Based Parent Training with Parent Mentor Adaptation

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Abstract

Introduction: Child-Adult Relationship Enhancement in Primary Care (PriCARE) is a 6-session group training designed to teach positive parenting skills. Parent engagement in such programs is a common implementation barrier. Our objectives were to (1) examine the impact of a peer mentor on attendance and stigma and (2) replicate a previous study by measuring PriCARE's impact on child behavior and parenting practices.

Method: Parents of 2- to −6-year-old children without specific behavior problems were randomized to mentored PriCARE (n = 50), PriCARE (n = 50), or control (n = 50). Stigma was measured at 10 weeks. Child behavior and parenting practices were measured at baseline and 10 weeks using the Eyberg Child Behavior Inventory (ECBI) and Parenting Scale (PS). Analysis of variance models were used to examine differences across groups.

Results: There was no significant difference in attendance between mentored PriCARE and PriCARE arms (mean 3.80 vs 3.36 sessions, $p = 0.35$). Parents randomized to the mentor reported lower stigma (3.75 vs 5.04, $p = 0.02$). Decreases in the mean ECBI scores between 0 and 10 weeks were greater in the PriCARE arms (n = 100) compared with the control arm (n = 50), reflecting larger improvements in behavior [intensity: −7 (−2 to −13) vs 4 (−3 to 12) to $p = 0.014$; problem: −3 (−1 to −4) vs 1 (−1 to 3) to $p = 0.007$]. Scores on all PS subscales reflected greater improvements in parenting behaviors in PriCARE arms compared with control (all $p < 0.04$).

Conclusion: Adapting PriCARE with a peer mentor may decrease stigma but does not improve program attendance. PriCARE shows promise in improving behavior in preschool-aged children and increasing positive parenting practices.

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Keywords

child behavior concern; parenting intervention; primary care

Behavior problems affect 20% of U.S. children younger than 5 years[1] and are associated with impairments in multiple domains (e.g., family, academic, and social functioning) that often continue into adulthood.[2] Although numerous environmental, child, and parental factors contribute to behavioral problems, ineffective parenting styles are a key causative factor. Parenting style is a well-researched conceptual categorization of parents' interactions with their children. Using behavioral continuums representing parental demandingness (behavioral control) and responsiveness (warmth), 4 styles of parenting behaviors have been identified.[3] *Permissive* (undemanding and highly responsive), *uninvolved* (neither demanding nor responsive), and *authoritarian* (highly demanding but not very responsive) parenting are associated with child behavioral problems.[4] *Authoritative* parenting (both demanding and responsive) has been described as the optimal parenting style and has been related to multiple positive child health outcomes.[5]

Evidence-based parenting interventions that promote positive, *authoritative* parenting can reduce the severity and frequency of behavioral problems, as well as the risk for long-term mental health consequences.[6–8] However, current family engagement strategies for such interventions are failing: only one-third of the invited families enroll in these programs and attend at least 1 program session; of these, 40% to 60% drop out despite the program offering financial incentives, childcare, refreshments, and transportation.[9] Identified barriers to attendance include logistical factors including wait times, travel, length of interventions, and time commitments, as well as the perceived stigma associated with participating in a parenting intervention.[10,11] Embedding a positive parenting program in primary care may address these logistical barriers and has the potential to increase utilization by establishing care in a familiar environment with a provider the family trusts.[12]

Although colocating such programs in primary care is an important step toward broader dissemination, additional implementation strategies are needed to reduce the gap between evidence-based programs and their uptake by parents in usual care. Peer mentoring is 1 promising strategy that has yet to be examined. Peer mentoring is an explicit form of peer social support in which a trained peer mentor provides emotional, appraisal, and informational support to another person experiencing a similar condition or circumstance.[13] A nonhierarchical peer mentor-parent participant relationship based on trust, acceptance, understanding, and empathy has the potential to reduce the stigma that often characterizes help seeking related to parenting. Although this has not been specifically examined in parenting interventions, some studies suggest that peer mentors reduce stigma among people with severe mental illness.[14] This reduced stigma may be 1 explanation for the lower attrition rates seen with peer mentor interventions compared with interventions with similar goals that do not use peer mentors.[15]

One example of a primary care-based parenting intervention is Child-Adult Relationship Enhancement in Primary Care (PriCARE), a 6-session group parenting program delivered in the child's primary care clinic. A randomized controlled trial (RCT) of PriCARE conducted

with parents of children with behavioral concerns in a northeastern, urban, and largely black pediatric residency clinic demonstrated success in improving child behavioral problems and decreasing reliance on harsh parenting.[16] In this trial, similar to other studies of parenting interventions, program attendance was a concern: only 43% of participants attended 3 or more sessions, and only 11% attended all 6 sessions.

Therefore, the aims of this RCT study were 2-fold: Our primary aim was to test the efficacy of a PriCARE peer mentor on improving PriCARE attendance and reducing stigma associated with accessing parenting support. We hypothesized that dyads randomized to mentored PriCARE would attend more sessions and would experience lower stigma compared with those randomized to standard PriCARE. The secondary aim was to replicate the findings from the initial PriCARE pilot in a new patient population and setting. In particular, we aimed to assess the impact of the PriCARE intervention in a population of children without specific behavioral concerns. We hypothesized that both PriCARE arms would demonstrate greater improvements in child behavior and positive parenting practices compared with the control arm.

METHOD

Study Setting

The randomized controlled trial was conducted in a pediatric residency continuity clinic in a suburban southeastern town. The clinic cared for about 12,000 patients in 2018, including 1385 unique 2- to 6-year-old children; 72% of the patients are insured by Medicaid or Children's Health Insurance Program (CHIP); 32% of the patients are Hispanic, 34% are black, and 27% are white. The University Committee for the Protection of Human Subjects and Institutional Review Board approved this study.

Participants

English-speaking parents of clinic patients who were 2- to 6- years old and attended a well-child visit during the study period were invited to participate. Concern for a behavior problem or problematic parenting were not required for participation. We excluded children (1) whose parents were younger than 18 years or did not have legal custody of the child, (2) whose global developmental performance was less than 2 years (because PriCARE techniques target a developmental level of at least 2 years), or (3) who were receiving medical treatment for a psychiatric condition other than attention-deficit hyperactivity disorder. Exclusion criteria were determined based on questioning parents and review of the medical record.

Procedures

A PriCARE coordinator contacted parents of potentially eligible 2- to 6-year-old children either during their well-child visit or by telephone after the visit. If parents expressed interest in attending PriCARE, they were invited to participate in the research study. Parents could opt to enroll in PriCARE and not the study. If parents consented to be contacted about the study, a member of the study team contacted the parent by phone, described the purpose of the PriCARE program and study, screened for eligibility, and obtained

informed consent to participate. Child-parent dyads were randomly allocated to PriCARE, mentored PriCARE, or control arms using a block randomization program in Stata 14.0 (Stata Corp, College Station, TX). The PriCARE and mentored PriCARE arms are described below. Randomization occurred after the baseline interview and was blinded at the time of allocation. Once the child-parent dyad had been allocated, their assignment was revealed to a PriCARE coordinator who organized the PriCARE groups. A list of the dyads randomized to the mentor arm was provided to the peer mentor about 1 week before initiation of the first session of each group so that she could contact the parents and introduce herself. The study team member administering the 2 study interviews remained blinded to arm status throughout the duration of the study. Parents and the PriCARE trainers/mentor were not blinded. Interviews were conducted with parents by phone at baseline and 8 to 12 weeks later. Parents were provided a $20 gift card after completion of each study interview. Randomization occurred between September 2017 and December 2018. Data collection was completed in March 2019.

Study Arms

Child-Adult Relationship Enhancement in Primary Care—Child-Adult Relationship Enhancement in Primary Care includes 6-weekly 90-minute sessions. All PriCARE groups were facilitated by 2 licensed clinical social workers (referred to as trainers) who completed the PriCARE facilitator training. A total of 10 PriCARE groups (5 PriCARE and 5 mentored PriCARE) were administered in the evenings at the clinic. Each group was attended by 6 to 12 parents without their children. Childcare, dinner, a toy to use during home practice, and transportation reimbursement were provided. The PriCARE curriculum has been previously described.[16,17]

All program materials are standardized[17] and supported by the underlying theory of change,[18] the existing literature on evidence-based parenting interventions,[6,19] and expert consensus.[20,21] PriCARE is similar to other evidence-based parenting models (e.g., Helping the Noncompliant Child, Incredible Years, Parent Child Interaction Therapy, and Parent Management Training—Oregon Model) in its focus on replacing harsh, inconsistent discipline and overly permissive discipline with structured, positive behavior management skills and strategies. However, these programs have several barriers to large-scale dissemination, including cost and logistics of engagement and participation. Thus, to enhance feasibility of implementation and reach, PriCARE includes group sessions only and has been scaled down in length while still retaining key elements identified by the Institute of Medicine and others as strong predictors of program effectiveness for promoting positive parenting practices and enhancing children's social, emotional, and intellectual health.[20,21]

Mentored Child-Adult Relationship Enhancement in Primary Care—This arm was identical to the PriCARE arm, with the exception that it involved a peer mentor. There was a single peer mentor in this study. The peer mentor was a parent who completed the standard PriCARE program before initiation of the study and demonstrated mastery of the parenting skills. Along with the 2 PriCARE trainers, the peer mentor cofacilitated the PriCARE groups in the peer mentor arm and provided peer-to-peer support and direct coaching on practicing the parenting skills taught during the program. The peer mentor

attended a modified 2-day PriCARE training for group facilitators in addition to an 8-hour motivational interviewing training, during which the peer mentor was taught to ask open-ended questions, provide affirmations, use reflective listening, and provide summary statements.[22,23] The peer mentor applied these skills strategically in weekly discussions with the study parents about practicing the PriCARE parenting skills in the home setting and planning for attending the 6 in-person sessions. The peer mentor called or texted parents in the peer mentor arm before each session and after the last session (7 conversations total) to discuss progress on homework and to address barriers for program attendance including psychosocial stress and stigma about attending a parenting program. By contrast, parents randomized to the PriCARE arm received 1 reminder text message from the PriCARE coordinator the day before each of the 6 sessions. The peer mentor attended weekly consultation meetings along with the PriCARE trainers.

Control—Control dyads were assigned to a waitlist, contacted after the final interview that occurred approximately 8 to 12 weeks after enrollment, and invited to participate in the intervention.

Measures—Immediately after enrollment (baseline), parents completed a demographic survey and assessments of child behavioral problems, parenting behaviors, and parent mental health. The second interview occurred at 8 to 12 weeks and measured behavioral problems, parenting, and stigma.

Demographic information included child age in years, sex, race/ethnicity (black non-Hispanic, white non-Hispanic, Hispanic, and other), health insurance (private and Medicaid/CHIP/uninsured), parent age and sex, highest level of education achieved by parent (high school diploma or less, associate or bachelor's degree, master's or professional degree), and annual household income (less than $20,000, $20,000 to $39,999, and $40,000 or greater).

Eyberg Child Behavior Inventory (ECBI) is a 36-item parent rating scale designed to measure conduct problem behaviors in children aged 2- to 16- years on 2 scales: the problem scale and the intensity scale. The test-retest reliability of the ECBI has been established with correlations of 0.88 on the problem scale and 0.86 on the intensity scale over a 3-week interval[24] and 0.75 for both the problem and intensity scales over a 10-month interval.[25] ECBI scores are highly correlated with observational measures of child negative affect, nonacceptance, and dominance.[26] The ECBI correlates with the Child Behavior Checklist externalizing scale ($r = 0.67$ problem scale, $r = 0.75$ intensity scale) and internalizing scale ($r = 0.48$ problem scale, $r = 0.41$ intensity scale).[27] The ECBI has high discriminant validity and is a sensitive indicator of intervention efficacy for child behavior problems.[26,28,29]

Parenting Scale (PS) is a 30-item self-report questionnaire that was designed to assess dysfunctional parenting discipline strategies, including laxness (permissive inconsistent discipline and providing positive consequences for misbehavior), overreactivity (harsh, emotional, authoritarian discipline characterized by irritability, and use of verbal or physical force), and verbosity (inappropriately placed, long verbal explanations). With the exception of the verbosity subscale, the PS has demonstrated adequate psychometric properties including internal consistency, test-retest reliability, and convergent validity with other

validated measures and is correlated with observational measures of inadequate parental discipline and child misbehavior.[30–32]

The Adapted Stigma Scale for Receiving Psychological Help is a 5-item parent-report instrument that measures the level of comfort or concern regarding accessing parenting support interventions. The scale has demonstrated excellent internal consistency, test-retest reliability, and construct and predictive validity.[33]

The Center for Epidemiologic Studies Depression Scale Revised (CES-D-R-10) is a 10 item self-report measure of depression that demonstrates excellent internal consistency (0.86), test-retest reliability (0.85), convergent validity (0.91), and divergent validity (0.89). A score equal to or above 10 is consistent with clinical depression.[34]

Child-Adult Relationship Enhancement in Primary Care Fidelity—Child-Adult Relationship Enhancement in Primary Care trainers documented session activities after each session using a fidelity checklist and had a 60-minute consultation after each 90-minute session with a senior trainer with extensive experience administering and overseeing PriCARE.

Qualitative interviews were conducted with a subset of randomly selected participants from the peer mentor arm to understand how the peer mentor was influencing parents' experiences with PriCARE, particularly as it relates to feasibility, acceptability, and participation. Interview questions are located in Box 1.

Outcomes—For our primary objective (mentored PriCARE vs PriCARE), the primary outcome was mean attendance, and the secondary outcome was stigma as measured by the Adapted Stigma Scale for Receiving Psychological Help. For our secondary objective (PriCARE arms vs control), the primary outcome was change in child behavior from 0 to 10 weeks as measured by the ECBI, and the secondary outcome was change in parenting from 0 to 10 weeks as measured by the PS.

Sample Size—For our primary objective, using a sample size of 100 child-parent dyads (50 mentor and 50 standard), we could detect a difference in the mean attendance of 1.1 sessions between mentor and standard subjects with a power of 80%, SD of 2, and a type-I error of 0.05.

For our secondary objective, using a sample size of 150 child-parent dyads (100 treatment and 50 control), we could detect a difference in the mean change between treatment and control subjects in ECBI intensity scores of 15 and in ECBI problem scores of 3.4 with a power of 80%, assuming standard deviations of 30 and 6.9, respectively, and a type-I error of 0.05.

Statistical Methods

Demographics and baseline measures of child behavior (ECBI), parenting (PS), and parent depression (CES-D-R-10) were summarized and compared by arm using descriptive

statistics. An intention-to-treat approach was used to estimate the effect of the intervention. All analyses were conducted using R version 3.5.2.

For the primary objective, analysis of variance (ANOVA) and analysis of covariance (ANCOVA) models were used to test the equality of the mean number of sessions attended and mean stigma score between the mentored PriCARE (n = 50) and PriCARE (n = 50) arms. The initial models included only arm and outcome. The models were repeated with CED-D-R-10 scores because this covariate was not equivalent between arms. Parent narrative responses during semi-structured interviews were recorded and transcribed. Qualitative data were imported into MAXQDA and analyzed using qualitative content analysis, a theory-driven approach.[35] A coding dictionary was developed. The goal of the analysis was to understand how the peer mentor influences implementation and parent participation in PriCARE.

For the secondary objective, an ANOVA model examined the change in ECBI intensity score, ECBI problem score, PS-total, and each of the PS subscale scores (laxness, over-reactivity, and verbosity) as the outcomes from 0 to 10 weeks for the PriCARE (n = 100) and control (n = 50) arms. Results are presented as estimated means from the ANOVA models. Next, ANCOVA models were fitted by adding CES-D-R-10 scores to each of the 6 regression models.

RESULTS

Participation in Child-Adult Relationship Enhancement in Primary Care

Between September 2017 and December 2018, 1047 2- to 6-year-old children attending well-child visits were assessed for eligibility. Of those, 201 were non-English speaking and 41 were developmentally delayed. After hearing a description of Child-Adult Relationship Enhancement in Primary Care (PriCARE) and the research study, 446 elected not to participate, most often because of the lack of interest in parenting help or time to participate in the program (Fig. 1).

Demographics

Insurance was Medicaid/Children's Health Insurance Program (CHIP) or no insurance for 55% of children; 33% were white non-Hispanic, 43% were black non-Hispanic, and 16% were Hispanic (Table 1). Most of the parents (93%) were mothers. Depression was present in 25% of parents. Depression scores were significantly lower in the PriCARE arm compared with the mentored PriCARE and control arms ($p = 0.03$). There were no other significant differences in child, parent, or household characteristics by arm.

Primary Objective: Impact of Peer Mentor on Attendance and Stigma

There was no significant difference in the mean number of sessions attended (3.8 vs 3.4, $p = 0.35$) between the mentored PriCARE and PriCARE arms (Table 2). The median number of sessions attended was 5 in the mentored PriCARE arm and 4 in the PriCARE arm. Mean scores on the Adapted Stigma Scale for Receiving Psychological Help were lower in the

mentor arm, reflecting less stigma compared with the PriCARE arm (3.8 vs 5.0, $p = 0.028$). That relationship did not change when adjusted for depression.

Qualitative interviews were completed with 15 of the 41 subjects who were randomized to the peer mentor arm and attended at least 1 session. Four themes emerged:

Text Reminders Facilitated Participation and Home Practice—Most parents interviewed described a positive experience related to text conversations with the peer mentor and noted that these interactions made them more likely to participate in home practice.

> Especially when she would check in and see how—what we learned and reinforce what we've learned, how's it going? And if I haven't touched on it yet, then, oh, snap. Gonna do that tonight. So, I enjoyed it. It was good.

> I found it helpful to the extent that it drew my attention to it. We're all living our busy lives and when we try to change, especially for old people like me, it's good to get reminders, and so—now that I think about it, it drew my attention to it which is good.

Only 2 mentioned that the reminders also made them more likely to attend the group sessions.

> Because it made it easier, talking I was like oh I can't come this week, but then I thought about it and I was like I'll just reschedule my schedule and move stuff so I can go to my class.

> And I mean she did help too because I had stopped working at the salon while attending the classes and she was able to give me a little bit of gas money so I could get home, which I really appreciated, because I wanted to come to the classes. I made it to all of them because of her.

The Peer Mentor was Encouraging and Available—Many parents expressed appreciation for the encouragement provided by the mentor, who was viewed unanimously as a positive, supportive person.

> It made me feel like somebody was checking up on me and like somebody cared. And she was very—obviously like—what's the word—like bought into all of the concepts and would always give examples about her son and was a really great sport.

> I think she encouraged. She would send text messages saying, great class. This is what happened, sometimes this is the issue or sometimes you'll run into these problems but continue. She had very positive text messages. So, she'd be very encouraging, like, okay, continue doing what you're doing. You're doing great. Things like that.

The Peer Mentor had Real-World Experience, as a Parent and a Child-Adult Relationship Enhancement in Primary Care Participant—Many parents mentioned

that, in contrast to the trainers, the peer mentor better appreciated their situation because she had a similarly aged child and had participated in PriCARE.

> She had a child so she knew kind of the stuff we was going through and then she took the class before so it made me feel at ease like yeah she's like me… it was less distressing to like talk about our stuff, I knew she wasn't judging us or nothing.

> In the beginning, I was kind of like I'm not sure how someone (the trainers) without children could train you how to be a parent with children. Like how can you tell us how to be a parent if you've never been there and done this? And that's why I felt (peer mentor) was so helpful because she had her experience. She had kids. She knew.

Negative Perceptions of Texting from Peer Mentor—Although most parents reported positive feelings about the text messages and felt the number of conversations with the peer mentor was appropriate, 2 participants had unfavorable perceptions of the texting.

> I did get a lot of text messages and so I just felt like I was hounded a little bit and that's not about her. I have a calendar on my phone, and I have a day planner where I write it all.

> They just sound like something that you guys told her to type out and send to us—each one of the—I don't know what you call them, but they just sound so generic versus genuine.

Secondary Objective: Impact of Child-Adult Relationship Enhancement in Primary Care on Child Behavior and Parenting

There were no differences in baseline Eyberg Child Behavior Inventory (ECBI) or Parenting Scale (PS) scores between the PriCARE study arms (Table 1). Decrements in mean ECBI intensity and problem scores between 0 and 10 weeks were greater in the PriCARE arms, reflecting larger improvement in behavior problems {intensity: −7 [95% confidence interval (CI), −2 to −13] vs 4 [95% CI, −3 to 12], $p = 0.014$; problem: −3 [95% CI, −1 to −4] vs 1 [95% CI, −1 to 3], $p = 0.007$}. The total PS score as well as the laxness, overreactivity, and verbosity subscale scores showed greater decreases in the PriCARE arms, reflecting greater reductions in ineffective parenting (Table 3). There was no difference in ECBI or PS change scores between the mentored PriCARE and PriCARE arms (data not shown, all $p > 0.1$). These relationships did not change when adjusted for depression.

DISCUSSION

Parenting programs based on cognitive-behavioral and social learning principles are effective in improving child behavior problems and parenting styles. However, such programs, to date, have achieved limited population reach. There is an opportunity for pediatric primary care to promote positive parenting by colocating and systematically disseminating these skill-building programs that strengthen the parent-child relationship and teach positive discipline strategies at the population level. Our study demonstrated the feasibility and effectiveness of a 6-session group parenting intervention for families with young children in this pediatric primary care setting. Dyads in the Child-Adult Relationship

Enhancement in Primary Care (PriCARE) arms demonstrated greater improvements in both child behavior and effective parenting practices compared with the control arm, and almost 60% of those randomized to PriCARE or mentored PriCARE attended 4 or more of the sessions. Although incorporating a peer mentor into PriCARE delivery reduced parental reported stigma associated with seeking parenting support, no statistical difference was observed in program attendance.

We approached recruitment differently compared with previous studies of parenting programs embedded in primary care, including our previous PriCARE randomized controlled trial (RCT).[16,36] In our initial RCT, most child participants already had clinically significant behavioral problems as measured by the mean baseline Eyberg Child Behavior Inventory (ECBI) intensity score of 149. These results suggested that we were not effectively reaching children with mild to moderate problem behaviors, for whom the PriCARE intervention might prevent or mitigate behavior problem escalation. In addition, in the previous study, we anecdotally found that parents referred to PriCARE reported feeling singled out as bad parents in need of parenting remediation. Thus, we reasoned that rather than focusing on families identified as having at-risk parenting or a child behavior problem, a universal referral approach may facilitate broader participation and reduce the perceived stigma associated with referral to the intervention. We therefore invited all English-speaking parents presenting for well-child care of their 2- to 6-year-old child to participate, regardless of perceived behavioral problems or need. This strategy resulted in 2 important findings that may be relevant for future implementation of PriCARE and other primary care-based parenting interventions.

First, the mean baseline ECBI scores were lower compared with the baseline scores in the initial RCT, indicating fewer children with severe baseline behavior problems (intensity scale: 106 vs 149; problem scale: 11 vs 20).[16] However, although the baseline behavior scores were lower in this study, the treatment arms still showed greater improvement compared to the control arm, suggesting that this brief intervention is effective even in a population with a lower disease severity. Second, although most of the demographic characteristics of the study participants were similar to those of the overall clinic population, only 55% of the study participants were insured by Medicaid compared with 72% of the general clinic population, suggesting a higher rate of participation among privately insured families compared with those with Medicaid. This propensity for higher-income families to be more likely to access parenting support has been previously described.[37]

Together, these observations suggest that our universal recruitment strategy succeeded in engaging parents of children before the development of significant behavior problems but may not have fully reached those with the greatest need (e.g., families struggling with more severe externalizing child behavior problems and lower-income families with higher likelihood for intergenerational transmission of problematic parenting). The long-term benefit of providing this brief intervention to parents of children without significant behavior problems rather than parents of children who have already developed serious behavior problems remains an important question that requires additional study. Future research will also need to focus on additional modifications and strategies designed to increase enrollment among lower-income families. We did not involve the peer mentor in recruitment in our

study. It is possible that earlier involvement of the peer mentor could help to close this enrollment gap between families with and without Medicaid/CHIP.

Mean attendance was not significantly greater in the mentor group, although median attendance was greater. This may suggest that we were underpowered to detect the impact of the peer mentor on attendance. Although a larger sample size may have demonstrated a small effect of the peer mentor on attendance, improvements of less than 1 session may not be clinically relevant or justify the added cost of including the peer mentor in the program. Although a few parents in the qualitative interviews mentioned that the reminders from the mentor enabled their attendance, the majority did not. By contrast, everyone interviewed discussed the midweek reminders prompting them to do the home practice. There is no evidence that the peer mentor had any impact on initiation of the program once a parent had enrolled, as roughly 1 in 5 parents in both arms (and the initial RCT) did not attend any sessions. The peer mentor introduced herself by text before the first session; we attempted a phone introduction, but it was difficult to reach most parents by phone in a timely fashion, and the parents expressed preference for text communication. Again, it is possible that involving the peer mentor in recruitment, before program enrollment, may have greater potential to influence both program enrollment and program initiation.

We hypothesized the peer mentor may increase program participation by bringing a unique perspective and understanding as a parent from the clinic who is navigating similar parenting challenges and has attended the clinic-based program. In qualitative interviews, a common theme of appreciating having a person who had walked in their shoes as a program participant may speak to this finding. Furthermore, many parents recognized that the peer mentor was the mother of a similarly aged child, and that the 2 trainers were not parents. These findings may explain why the peer mentor arm reported lower stigma associated with attending a parenting program.

Although we examined the effect of the peer mentor on reducing stigma and improving attendance, we acknowledge that it is possible that other benefits of the peer mentor were present but not measured. For example, the qualitative data suggest that the parents in the mentor arm may have been more motivated to practice skills at home; however, this was not measured. The mentored parents also could have endorsed greater self-efficacy in using the parenting skills or could have been more likely to continue to use their newly learned parenting skills after the duration of the study. These hypotheses are important and should be explored in future research.

Because this was the first study incorporating a peer mentor into PriCARE, we elected to minimize variation between the 10 PriCARE groups by using the same personnel to deliver the intervention for all study groups, including using a single peer mentor in the 5 mentored PriCARE groups. However, having a single peer mentor is a potential limitation of this study as individual factors may increase or decrease the efficacy of the peer mentor. For instance, it is possible that race and socioeconomic congruence between the parent participants and the peer mentor may influence efficacy. Therefore, our study should be replicated with a larger cohort of peer mentors.

Our trial was conducted in a single pediatric clinic, and most of the families approached did not enroll, limiting study generalizability. However, overall program enrollment should be interpreted in the context of primary versus secondary prevention. Although only one-third (Fig. 1) of the child-parent dyads invited ultimately enrolled in the study, compared with other behavioral management interventions delivered to parents of children with moderate to severe behavior problems, PriCARE was delivered to a largely subclinical population. Thus, the enrollment rate of about one-third may be more impactful than it seems because the families who participated had the opportunity to receive parenting support that otherwise might not have been available to them. This may hold promise for the prevention of more severe problems in the future and should be examined with future research.

Another limitation was lack of blinding of parents to the study arm. The member of the study team conducting the interview reminded parents of the importance of not sharing their treatment arm with the interviewer before each interview; however, parent responses could have been influenced by their knowledge of whether or not they received the intervention. Our study was also limited in its use of parent report scales to measure child behavior and parenting constructs. Although these instruments are well validated and reliable, there remains an inherent limitation to understanding true changes in child behavior and parenting practices when relying solely on self-report measures. Future evaluations of PriCARE should also incorporate observational measures and health outcomes. Additional studies with larger sample sizes are also needed to understand how sociodemographic groups differ in both PriCARE uptake (enrollment and attendance) and PriCARE effectiveness (improvements in child behavior and positive parenting).

CONCLUSION

Child-Adult Relationship Enhancement in Primary Care (PriCARE) shows promise in improving behavior in preschool-aged children and increasing positive parenting practices, even in the absence of previously identified child behavioral problems. Adapting PriCARE with a peer mentor may decrease stigma but did not impact child behavior, effective parenting, or program attendance.

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Box 1:

Interview Guide for Parent Interviews in the Parent Mentor Arm

What was it like to have a parent mentor helping with the classes?

What, if anything, was the best part about having a parent mentor?

What, if anything, did not work well with having a parent mentor?

What was it like to get phone calls or text messages from the parent mentor between the classes?

Did you participate in the calls or text messages with the parent mentor?

If not: Why did you not participate in the phone calls or text messages?

If so: What, if anything, did you like about these calls or text messages? What, if anything, did you not like about these calls or text messages?

In what ways did the parent mentor help you attend the classes, if any?

In what ways did the parent mentor help you with the home practice, if any?

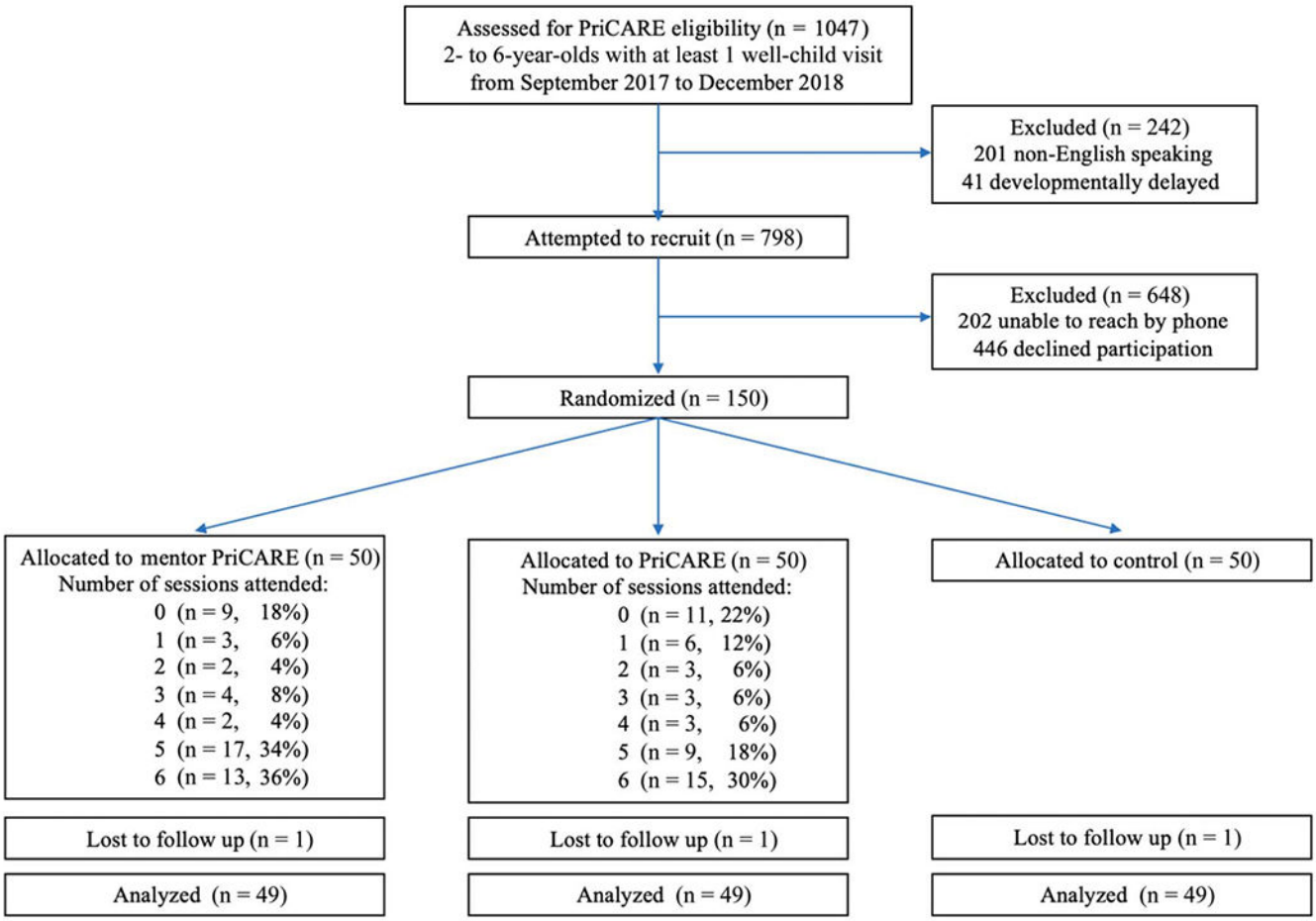

Figure 1.

Random assignment and follow-up for child-parent dyads enrolled in 3 arms (mentored PriCARE, PriCARE, and control). PriCARE, Child-Adult Relationship Enhancement in Primary Care.

Table 1.

Demographics and Baseline Measures[a]

	Mentor PriCARE, n = 50	PriCARE, n = 50	Control, n = 50
Child sex, n (%)			
Male	23 (46%)	27 (54%)	30 (60%)
Child age, mean (SD), yr	2.5 (1.3)	2.6 (1.2)	2.6 (1.4)
Child race/ethnicity, n (%)			
Black, non-Hispanic	20 (40%)	20 (40%)	24 (48%)
White, non-Hispanic	15 (30%)	19 (38%)	15 (30%)
Hispanic	12 (24%)	5 (12%)	7 (14%)
Other	3 (6%)	5 (10%)	4 (8%)
Insurance, n (%)			
Public/uninsured	32 (64%)	24 (48%)	27 (54%)
Parent age, n (%)			
18–29 yr	17 (34%)	18 (36%)	21 (42%)
30–39 yr	24 (48%)	25 (50%)	22 (44%)
≥40 yr	9 (18%)	7 (14%)	7 (14%)
Parent sex, n (%)			
Female	48 (96%)	46 (92%)	45 (90%)
Parent education, n (%)			
High school diploma or less	23 (46%)	18 (36%)	21 (42%)
Associate or bachelor's degree	14 (28%)	16 (32%)	21 (42%)
Master's or professional degree	13 (26%)	16 (32%)	8 (16%)
Annual income, n (%)			
<$20,000	15 (30%)	8 (16%)	8 (16%)
$20,000–$39,999	12 (24%)	7 (14%)	12 (24%)
≥$40,000	22 (44%)	34 (68%)	28 (56%)
CES-D-R-10 Positive,[b] n (%)	15 (30%)	5 (10%)	18 (36%)
Baseline ECBI,[c] mean (SD)			
Intensity scale	102 (34)	116 (32)	102 (37)
Problem scale	11 (8)	12 (7)	10 (8)
Baseline Parenting Scale,[d] mean (SD)			
Total	2.8 (0.7)	2.8 (0.7)	2.7 (0.5)
Laxness	2.8 (1)	2.6 (1)	2.5 (0.9)
Over-reactivity	2.3 (0.7)	2.4 (0.7)	2.1 (0.7)
Verbosity	3.6 (0.9)	3.8 (1)	4 (0.9)

[a] There were no differences between the PriCARE, mentored PriCARE, and control groups using Pearson's χ^2 tests for binary variables and F-tests for continuous variables, except for the presence of a positive CES-D-R-10 score ($p = 0.007$).

[b] Center for Epidemiologic Studies Depression Scale Revised. A score equal to or above 10 is considered depressed.

[c] Eyberg Child Behavioral Inventory. The clinical cutoffs are 131 for the intensity scale and 15 for the problem scale.

[d]Parenting Scale. Scores range from 1 to 7, with higher scores associated with more ineffective parenting. Published cutoffs associated with infective parenting include 3.1 total, 2.8 laxness, 3.0 over-reactivity, and 3.4 verbosity. CES-D-R-10, Center for Epidemiologic Studies Depression Scale Revised; ECBI, Eyberg Child Behavior Inventory; PriCARE, Child-Adult Relationship Enhancement in Primary Care.

Table 2.

Attendance

Sessions Attended	PriCARE 2019, N = 50	Mentor 2019, N = 50
0	22% (11)	18% (9)
1	12% (6)	6% (3)
2	6% (3)	4% (2)
3	6% (3)	8% (4)
4	6% (3)	4% (2)
5	18% (9)	34% (17)
6	30% (15)	26% (13)
Mean (SD)	3.36 (2.4)	3.80 (2.2)
Median	4	5

PriCARE, Child-Adult Relationship Enhancement in Primary Care.

Table 3.

Parenting Scale Mean Change Scores From 0 to 10 Wk

Parenting Scale	PriCARE, Mean (95% CI)	Control, Mean (95% CI)	*p*
Total	−0.27 (−0.38 to −0.15)	0.04 (−0.13 to 0.2)	0.003
Laxness	−0.17 (−0.33 to −0.01)	0.18 (−0.04 to 0.41)	0.012
Over-reactivity	−0.22 (−0.35 to −0.09)	0.08 (−0.1 to 0.27)	0.011
Verbosity	−0.6 (−0.79 to −0.42)	−0.27 (−0.53 to 0)	0.042

Mean differences on the total and 3 subcategories of the Parenting Scale in the change scores at 10 weeks compared with 0 weeks were assessed between the combined PriCARE and control arms using ANOVA models. ANOVA, analysis of variance; CI, confidence interval; PriCARE, Child-Adult Relationship Enhancement in Primary Care.