

**Evaluating Child-Adult Relationship  
Enhancement (CARE) with a Professional Sample**

by

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## Abstract

The Child-Adult Relationship Enhancement (CARE) model is a prevention model designed to teach parent management skills to any adult who interacts with children (Gurwitch et al., 2016). To date, the limited published studies on CARE effectiveness have been conducted with parents or foster caregivers of children (Gurwitch et al., 2016; Messer et al., 2018; Schilling et al., 2016; Wood et al., 2017). The current study aimed to evaluate the effectiveness of the CARE workshops through measurement of knowledge, trainees' reported perceived effectiveness, and trainee-reported daily use of CARE skills. The current study found that trainees' knowledge of CARE significantly increased one day post-CARE workshop and that the gains remained consistent one-month after the workshop. No significant evidence was found to support any relationship between the trainees' knowledge of CARE and their perceived effectiveness or self-reported usage of the skills.

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## List of Abbreviations

AAPI2	Adult Adolescent Parenting Inventory 2
ADHD	Attention-deficit/hyperactivity disorder
ASD	Autism spectrum disorder
CALM	Coaching Approach behavior and Leading by Modeling
CARE	Child-Adult Relationship Enhancement
CBCL	Child Behavior Checklist
CDI	Child directed interaction
DBD	Disruptive Behavior Disorders
DPBHS	Division of Prevention and Behavioral Health Services
DPICS-IV	Dyadic Parent-Child Interaction Coding System, Fourth edition
ECBI	Eyberg Child Behavior Inventory
EBP	Evidence-based practice
EBT	Evidence-based treatment
ODD	Oppositional Defiant Disorder
PCIT	Parent-Child Interaction Therapy
PCIT-SM	Parent-Child Interaction Therapy – Selective Mutism
PDI	Parent directed interaction
PMT	Parent management training
SAD	Separation anxiety disorder
SM	Selective mutism
TCIT	Teacher-Child Interaction Training
TSCYC	Trauma Symptom Checklist for Young Children

## **Evaluating Child-Adult Relationship Enhancement (CARE) with a Professional Sample**

In recent years, the importance of evidence-based practice has grown to “become a key feature of health care systems” in general, as well as within psychology (APA Presidential Task Force on Evidence-Based Practice, 2006, p. 272). In 1995, the American Psychological Association formed a Task Force whose mission was to ascertain which treatments were as effective as pharmacological prescriptions, so that the most efficient and economical treatments could be offered to clients. During their assignment, the Task Force defined evidence-based practice (EBP) as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (APA Presidential Task Force on Evidence-Based Practice, 2006, p. 273). By using treatments that have been empirically supported, mental health practitioners can ensure that their clients are receiving the best treatment possible in the most cost-effective way. In the years since the APA Task Force first released their statement on EBP (APA Presidential Task Force on Evidence-Based Practice, 2006), much research on evidence-based treatments (EBT) has been conducted, including research specifically relating to treatments for children and adolescents.

### **Evidence-Based Parent Management Training**

One of the most well researched evidence-based treatments is Parent Management Training (PMT), which seeks to teach parents effective management of child behavior. The goal of many PMT programs, which developed largely from Hanf’s pioneering treatment and research of dyads of noncompliant children and their parents, is to teach parents how to positively relate to their child before working on disciplinary skills, commonly referred to as the PMT two-stage model (Eyberg & Robinson, 1982; Messer et al., 2018). There are many PMT programs, such as Webster-Stratton’s Incredible Years (Webster-Stratton & Reid, 2003), Triple P Positive



Parenting Program (Sanders, 1999), and Parent-Child Interaction Therapy (Eyberg & Robinson, 1982; Eyberg & Funderburk, 2011; Niec, 2018), and a great deal of research has been conducted on these protocols over the years. This research has led to PMTs becoming one of the most strongly supported treatments for children with behavioral problems (Brestan & Eyberg, 1998; Eyberg et al., 2008; Michelson et al., 2013).

In particular, Parent-Child Interaction Therapy (PCIT) has resulted in much research supporting positive treatment outcomes for both parents and children. Specifically, research has found evidence for significantly decreased child externalizing behavior, significantly reduced parent stress, and increased child compliance with parent commands following treatment with PCIT (Agazzi et al., 2017; Lieneman et al., 2017; Thomas et al., 2017; Ward et al., 2016). PCIT has also been shown to effectively increase positive parent behavior and decrease abusive behavior relative to control parent training programs (Chaffin et al., 2004).

Over the years, PCIT clinical practice and research has expanded from focusing on external behaviors of children with problems of disruptive behavior to a wide variety of other concerns, such as symptoms associated with Autism Spectrum Disorder (ASD; Furukawa et al., 2018; Vetter, 2018; Scudder et al., 2019; Zlomke & Jeter, 2019) and symptoms of inattention and lack of inhibition found among children with Attention Deficit Hyperactivity Disorder (ADHD; Ahmadi et al., 2017; Leung et al., 2017; Vetter, 2018). Studies investigating the effect of PCIT with children with ASD have shown a decrease in child problem behaviors, increase in child compliance, decrease in parent stress, and increase in relationship quality between the child and parent (Vetter, 2018). These findings generalize to a range of functioning levels and IQ scores for this population, showing that PCIT can be adapted for higher or lower functioning children (Vetter, 2018). Similarly, studies evaluating the effectiveness of PCIT with children

with ADHD have found a decrease in child problem behavior, a decrease in parent stress, improvements in the children's behavior at home and school, and improvements in family relationship quality, both between the parent and child and between spouses (Vetter, 2018).

PCIT has also been adapted to treat children a variety of anxiety disorders, including Separation Anxiety Disorder (SAD) and Selective Mutism (SM), by incorporating an additional module that teaches children how to behave bravely through the use of cognitive behavior therapy techniques (Comer et al., 2012; Puliafico et al., 2012; Carpenter et al., 2014; Pincus et al., 2008). For example, Coaching Approach behavior and Leading by Modeling (CALM) was adapted from PCIT for children with SAD to generalize to children with many different types of anxiety disorders, such as social anxiety disorder, generalized anxiety disorder, and specific phobias (Carpenter et al., 2014; Comer et al., 2012). From its pilot study, children who completed CALM showed improvements in their anxiety symptoms (Comer et al., 2012). Additionally, PCIT has also been adapted for children with Selective Mutism (SM) and research has shown that PCIT-SM is an effective treatment for increasing child speech with an unknown adult (Carpenter et al., 2014; Cotter, Todd, & Brestan-Knight, 2018; Catchpole et al., 2019).

### **Parent-Child Interaction Therapy**

Like most PMTs, PCIT was modified from Hanf's dyadic program used for children with hyperactivity or noncompliance (Eyberg & Robinson, 1982). The parenting skills highlighted in PCIT include behaviors that strengthen the relationship between child and parent, such as actively listening to the child, responding to the child in positive, encouraging ways, and supporting the child in his or her problem solving and creative activities (Eyberg & Robinson, 1982). PCIT was designed to be used for children ages 2-7 and contains two separate treatment modules: Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI). During CDI

sessions, the therapist observes the dyad for 5 minutes and gives the parent coaching feedback through a bug-in-ear device, praising the parent for their use of the learned PCIT skills (Eyberg & Robinson, 1982).

During CDI, the main goal is for the parent to imitate the child's play and provide positive attention to desired behaviors through reflecting the child's speech, praising them for pro-social behaviors, and describing what the child is doing during play (Eyberg & Robinson, 1982). During CDI, the parent is also discouraged from giving commands or asking questions so that the child feels validated in his or her decisions. Similarly, reflecting the child's statements, describing their current activity, and providing labeled praise for appropriate behaviors and ignoring inappropriate behaviors work to reinforce positive interactions between the dyad and increase the likelihood of the child engaging in the desired behavior with greater frequency (Eyberg & Robinson, 1982).

During PDI, the parent uses the CDI skills concurrently with PDI skills that include giving effective commands and enforcing consistent punishment when the child does not comply with a command. This interaction is intended to increase the frequency of desired child behaviors (e.g., compliance with commands, respectful speech) and decrease undesired behaviors that were too potentially dangerous to ignore during CDI (e.g., throwing toys, biting, jumping off of high surfaces; Eyberg & Robinson, 1982). In order to achieve these effects, the parent learns how to give direct commands (e.g. "Please hand me the doll") instead of indirect commands (e.g. "Can you please hand me the doll?"). They also learn how to consistently enforce time-outs when the child does not comply with a command. If the child does comply with a command, the parent is taught to praise the child's compliance in order to increase the likelihood of obedience in the future (Eyberg & Robinson, 1982).

## **Child-Adult Relationship Enhancement**

Whereas PCIT was designed to treat children with a broad range of childhood disruptive behavior disorders (DBD), such as oppositional defiant disorder (ODD) and ADHD (Eyberg & Robinson, 1982; Ward et al., 2016), Dr. Robin Gurwitch and her colleagues believed it would be beneficial to develop a less-intensive prevention model utilizing PCIT skills for adults who work with children (Eyberg & Funderburk, 2011; Gurwitch et al., 2016). To make the behavioral skills and benefits of PCIT more accessible to community providers, Dr. Robin Gurwitch and colleagues developed the Child-Adult Relationship Enhancement (CARE) model in 2006 (Gurwitch et al., 2016; Eyberg & Funderburk, 2011). The main distinction between PCIT and CARE is that the former is a mastery-based treatment protocol that involves in-vivo coaching sessions with a parent-child dyad while the latter is a lower-dose prevention model that is based on PCIT and provides information about CDI and PDI skills to caregivers or adults individually or in group workshop settings. Any adult who interacts with children can use the CARE model and it is likely useful for a wide range of professionals, including teachers, pediatricians, and social workers. The skills can be used with any child ages 2-18 years old and because the model is not therapy, the CARE developers recommend that this prevention model should not be used to treat more severe cases of misbehavior, but rather to supplement ongoing treatment or to prevent the need for more intensive treatment for those children at risk to develop a disruptive behavior disorder (Gurwitch et al., 2016).

In general, the main goal of prevention models is to identify and enrich protective factors already experienced by the child to prevent the development of more clinically significant behavioral problems in the future (Durlak & Wells, 1997). Like CARE, Triple P- Positive Parenting Program (Triple P) is an example of another widely-used prevention model that

focuses on young children who are susceptible to negative outcomes, such as externalizing and internalizing disorders and child maltreatment (Proctor & Brestan-Knight, 2016; Sanders, 1999). The lowest tier of Triple-P focuses primarily on prevention of more adverse outcomes and has been shown to have small to medium effect sizes, with effectiveness increasing with more intense presentations of those targeted risk factors (Sanders, 1999; Proctor & Brestan-Knight, 2016). Additionally, Triple P as taught to a group of Japanese families has been shown to decrease parents' perceived difficulty of parenting their children, decrease parent-reported child behavior problems, and increase their confidence to parent their children, presumably because they have been taught PMT skills (Fujiwara et al., 2011).

CARE is similar to the prevention services of Triple P in that it does not seek to treat children with already diagnosed disorders, rather it is a prevention model designed for children who are at risk for developing behavior disorders. However instead of focusing on the parents like in Triple P or PCIT, CARE seeks to teach any adult interacting with a child these PMT skills through informative workshops that last approximately 3-6 hours (Gurwitch et al., 2016). These workshops are typically completed over the course of one day, however they can also occur over several sessions, if desired. During training, the participants learn how to follow the child's lead, provide labeled praise, provide positive attention for the child's desired behaviors, and reflect the child's vocabulary. Trainees also learn how to avoid asking questions or using critical statements when interacting with children. Specifically, these skills are packaged as the Ps and Qs of CARE, with the three Ps being Praise, Paraphrase, and Point out appropriate behavior, and the three Qs being Quash the need to lead, Quiet the criticisms, and Quit unnecessary questions. These skills are reinforced through watching videos as a group and interactive roleplay activities presented during the workshop (Gurwitch et al., 2016; Messer et al., 2016). The interested reader can go to

the iCARE Collaborative website for more information about CARE (iCARE Collaborative, 2020; [www.iCAREcollaborative.org](http://www.iCAREcollaborative.org)).

Despite its recent development, over 2,000 adults from various backgrounds have completed CARE training in the U.S. and its reach continues to expand internationally (Gurwitch et al., 2016). The largest dissemination of the CARE model occurred in the state of Delaware, where not only were mental health professionals trained in PCIT statewide, but teachers also received training in Teacher-Child Interaction Training (TCIT). To expand on the benefits of EBT for children, the State of Delaware's Division of Prevention and Behavioral Health Services (DPBHS) also chose to implement CARE in populations of professionals who interact with children in hospitals, doctors' offices, and other health settings (Gurwitch et al., 2016). These populations included staff in mental health facilities, speech and occupational therapists, and support therapists working in crises centers for women and families. CARE skills were also taught to pre-K educators. Despite being the largest implementation of CARE to date, there has been a lack of follow-up data from the CARE project in Delaware, and very little research has evaluated the application of the model in any setting (Gurwitch et al., 2016).

One recently published study examined the use of CARE skills in primary care settings (PriCARE) and focused on the role primary physicians can play in the behavioral concerns of parents and their young children (Schilling et al., 2016). The participants of this study were 120 parents of children 2-6 years old who presented at the primary physician's clinic within a large children's hospital due to concerns of misbehavior. It was hypothesized that PriCARE would reduce the misbehavior of child patients and increase the positive parenting practices of the parents. PriCARE was implemented over 6 weekly sessions lasting 1.5 hours each. During these sessions, a mental health professional trained in CARE taught parents CARE skills (e.g., how to

give effective commands, increase desired behavior through reinforcement, and ignore undesirable behaviors) in a group setting (Schilling et al., 2016). Of the 80 dyads randomized to the PriCARE condition, 43% attended at least 3 of 6 sessions, though data from all 80 dyads was used for analyses. Children in the PriCARE group had a larger average decrease in behavior problems as measured by the Eyberg Child Behavior Inventory (ECBI; Eyberg & Ross, 1978; Eyberg & Pincus, 1999), indicating an improvement in parent-reported behavior problems, though this difference between groups was not statistically significant (Schilling et al., 2016). Results from the Adult Adolescent Parenting Inventory 2 (AAPI2), a self-report measure of parenting and child-rearing attitudes of parents, indicated that parents in the PriCARE group reported a small increase in parental empathy for their child and value for their child's autonomy compared to the control group. Results from the AAPI2 also showed a small, not statistically significant decrease in self-reported use of physical punishment for the PriCARE group, but no change for the control group (Schilling et al., 2016). Results from this RCT suggest that parents who attended CARE sessions in a primary care setting reported decreased child behavioral problems and increased positive parenting practices relative to a control group, however intervention gains were only reported when parents attended at least half of the sessions. Notably, despite being significantly shorter than PCIT, this study suggests that parents might still be reluctant, or have difficulty, engaging in just 6 hours of group CARE training (Schilling et al., 2016).

The effectiveness of CARE has also been studied amongst children in the foster care system. Wood, Dougherty, Long, Messer, & Rubin (2017) conducted a study in which caregivers of nineteen children (ages 3-8 years old) from two foster care agencies were taught the CARE skills during 6 hours spread across two sessions. The CARE group was compared to a historical

control sample of foster care children who had not received any form of intervention. To measure the children's behavioral problems at baseline (i.e., child's entry into the foster care system) and 6-7 months after completion of CARE, foster caregivers were asked to complete the Child Behavior Checklist (CBCL). The historical control group also measured child behavior problems with the CBCL at entry into foster care and reassessed these problems 6-7 months after initial placement. Results showed that children in the CARE group had significantly lower caregiver-rated internalizing and externalizing behavior problem scores compared to the control group at the completion of CARE training. This effect was concentrated in the younger preschool aged children with no effects found for school aged children, which may suggest that a different or more intensive therapy may be needed for older children (Wood et al., 2017).

Further research was conducted to investigate the effect of CARE training on foster parents' parenting behavior and parent-reported child anxiety. Thirty-one foster parents were randomly assigned to either receive CARE training or standard training. Fifteen foster parents were randomly assigned to the CARE training group and completed two 3-hour CARE sessions (Messer et al., 2018). The fourth edition of the Dyadic Parent-Child Interaction Coding System (DPICS-IV), a coding system used in PCIT to measure observed positive and negative parent behavior during an analog play situation, was used to measure the use of CARE skills by the foster parents during a caregiver-child role-play both before the first CARE training and after the second session (Messer, et al., 2018). Results showed that one month after the training, the CARE group had a significant increase in observed positive parenting statements as compared to a control group. Specifically, the foster parents in the CARE condition used an average of 4 positive statements during the first session and increased their average usage to 13 positive statements at the second session. Similarly, CARE trained foster parents were 0.68 times less



likely to negatively respond to their child, with a decrease from 13 to 9 directive statements from session 1 to session 2 (Messer et al., 2018). Additionally, the CARE group foster parents reported on the Trauma Symptom Checklist for Young Children (TSCYC) that their foster child experienced significantly fewer anxiety symptoms at 3 months post-training compared to the control group (Messer et al., 2018).

To date, the research evaluating the use of the CARE model has focused on parents and foster caregivers of children, however no research has been conducted to evaluate the use of CARE with non-caregiver professionals. Researchers will next need to establish the effectiveness of CARE with this population and assess the usage of the CARE skills within professional environments. Additionally, the perceptions of feasibility and effectiveness of CARE in the workplace must be assessed because these factors both have implications for future use of the skills.

### **Goals of the Current Study**

The goal of the current study was to add to the growing literature surrounding CARE and its effectiveness for different populations. In particular, the study examined CARE workshop outcomes for professionals who often have contact with children, including social workers, pediatricians, pre-K teachers, and childcare providers. The current study included an analysis of archival data as well as new data collected during CARE training workshops. Specifically, the present study included measurement of CARE trainees' self-reported knowledge of the CARE skills, self-reported use of the CARE skills following the workshop, and trainee-reported perceived effectiveness of the skills. Data were collected prior to the start of the CARE workshop, one day after training, and one month after the workshop.

This study provided data on the relation between participant CARE knowledge and perceived effectiveness immediately following the CARE training. Additionally, this study addressed whether post-training CARE knowledge predicted follow-up perceived effectiveness of CARE one day after the workshop and self-reported usage of the skills one-month following the workshop. Expressly, the tested hypotheses were as follows:

1. Trainee's knowledge of CARE, as measured by the CARE quiz, would increase from pre-workshop to both one-day and one-month post-training.
2. Greater trainee knowledge of CARE and greater perceived effectiveness of the CARE skills at the completion of the workshop would predict higher levels of trainee reported use of CARE skills at one-month follow-up.
3. Trainee perceived effectiveness of CARE would partially mediate the relationship between trainee post-workshop knowledge of CARE and trainee reported use of the CARE skills at one-month follow-up. The mediation model can be seen in Figure 2.

Additionally, an exploratory hypothesis was added after the initial statistical tests were completed. This post hoc hypothesis, listed below, was designed to better understand the nuances of trainee acquisition of CARE knowledge.

4. Trainees with medical degrees (e.g., pediatricians) would have more knowledge of CARE, as measured by the CARE Quiz, both before and after the workshop compared to non-pediatricians.

## **Method**

### **Participants**

Data were collected from participants of 5 separate CARE training workshops. The first three sets of data collection were completed prior to the proposal of the current study and included 133 participants, comprised of both pediatricians and social workers. The first CARE workshop took place in Point Clear, Alabama on April 29, 2016. The second and third workshops took place in Montgomery, Alabama on February 22 and 23, 2017 respectively. The fourth CARE workshop took place in Tuscaloosa, Alabama on May 8, 2019 and the final workshop occurred in Cincinnati, Ohio on October 24, 2019. Although a total of 161 workshop attendees participated in the study at the first timepoint, only 41 participated at the one-month follow-up time point. To detect a medium effect size with a power of .80, 68 participants were needed for this study, therefore the current study is likely underpowered.

### **Measures**

The measures collected for the first four CARE workshops are described below. The fifth CARE workshop contained the same measures as the first four with the addition of the Use of Skills survey, which is also described in more detail below.

### ***Demographics***

Demographic information for the CARE trainees was obtained by the Background Information form given to all trainees. Information on this form included participant's age, gender, race/ethnicity, the year in which their highest degree was completed, their highest level of educational degree acquired, their place of employment, years of experience working with children, and number of years working in their current position. Participants' names and email

addresses were also collected in order to contact them post-workshop to complete the measures one month later.

### ***Knowledge of CARE***

The CARE quiz was designed to assess the workshop trainees' knowledge of the skills taught during the CARE workshop and is comprised of fifteen multiple-choice items with four answer options. Notably, this measure was adapted from the PCIT quiz, a psychometrically sound measure used by PCIT researchers, to reflect the language used in CARE workshops. The items include definitional questions, such as "What do the 3 Ps stand for?", and applied questions, such as "You and a child are playing with toy animals and the child says, 'I've got a moo cow.' An example of a paraphrase you could use is which of the following?" There are currently no published or unpublished studies available on the psychometric properties of this measure.

### ***Perceived Effectiveness of CARE***

To assess the trainees' perceived effectiveness of CARE both one day and one month after the workshop, the Child Adult Relationship Enhancement (CARE) Evaluation was created. The CARE Evaluation measure's wording was different based on the time it was given to the participants, however the construct measured (i.e., participants' perceived effectiveness of CARE) was the same across time points. For example, for one day post-workshop, the first item stated "The 3 Ps skills can be useful in my setting", whereas for one month after training, the first item stated "The 3 Ps skills have been useful in my setting." The version administered one day after training had ten items on a four-point Likert scale, an eleventh question open-ended question that asked what specific setting and population does the participant work with, and a twelfth open-ended question providing space for any additional comments. Only the first 10

questions were used to determine the overall perceived effectiveness score one day after the workshop. The one-month post-workshop form was comprised of thirteen items that are all on a four-point Likert scale. The first eight and the final three items were used to ascertain the participants' perceived effectiveness at follow-up. Items 9 and 10, which measured usage of CARE skills with children and adolescents respectively, were not considered in the computation of perceived effectiveness given the content of the items.

### *Use of CARE Skills*

Two measures were used to assess the trainees' self-reported usage of the CARE skills. The first measure, the two-item CARE Usage measure, was computed using items 9 and 10 of the CARE Evaluation at the one-month follow-up time point. This measure was referred to as the nonspecific use of CARE skills survey because the items used asked the participants to rank their use of all of the skills generally on a 4-point Likert scale. However, a second survey was added after the current study was proposed and this survey assessed skill usage in a more detailed manner. Specifically, this survey contained six questions about the frequency in which the trainees use the three Ps of CARE: Praise, Point Out, and Paraphrase, and how often they engaged in the three Q's which they were encouraged to avoid: Quash the need to lead, Quiet the criticisms, and Quit unnecessary questions. Each item allowed for the trainee to rate their usage of the Ps and Qs on a Likert scale, where 1 is "Never" and 5 is "Always." The survey was administered to the CARE workshop trainees at all 3 time points: before training, one day after training, and one month after the workshop. The Use of Skills survey was administered to the trainees of the fifth CARE workshop after the current study had been proposed to the principal investigator's thesis committee. There are currently no published or unpublished studies available on the psychometric properties of this measure.

## **Procedure**

The procedures conducted for the four previously conducted CARE workshops are described below. The fifth CARE workshop followed the same procedure as the first four with the addition of the Use of Skills Survey at all three time points in order to more accurately assess the trainees' actual usage of the CARE skills before and after completion of the workshop. Participants were recruited from a 3.5 hour long CARE training workshop. At the beginning of the workshop, participants gave their IRB informed consent to participate in the study and completed the demographics form and the first CARE quiz to assess their knowledge of the skills before the workshop. At this time, the participants' names and email addresses were also collected for future data collection.

Trained CARE facilitators presented information about the background, structure, and skills from the CARE protocol during the workshops. Trainees were given two handouts, one focusing on CARE skills for younger children and the other focusing on skill usage with teenagers. The main focus of the handouts were for the trainees to "mind their Ps and Qs" when interacting with children, with Ps being "Praise, Paraphrase, and Point out, and the Qs being Quash the need to lead, Quit questions, and Quiet the criticisms" (Messer et al., 2016). The skills were the same for both handouts, however they were adapted to better accommodate the targeted age range. Additionally, both handouts contained information about selective attention, or how to ignore undesirable behavior, and how to give effective commands (Messer et al., 2016). The skills were then enforced through various activities, such as roleplays between dyads of trainees, each taking turns acting like a child and engaging in a playtime scenario in which they could use the learned skills.

The day after the CARE training workshop, participants were emailed a link to a Qualtrics survey, which contained the CARE quiz and the CARE Evaluation Post-Workshop measure, which assessed perceived effectiveness of CARE. One month after the workshop, the participants were emailed again with another Qualtrics survey link. This link contained the CARE quiz and the CARE Follow-up Evaluation, which assessed the participants' perceived effectiveness of the learned CARE skills and the two-item CARE Usage measure. The participants from the final CARE workshop also completed the Use of Skills Survey at all 3 timepoints, which provided a more detailed measurement of their usage of the CARE skills in comparison to the CARE Follow-up Evaluation.

All data were de-identified by undergraduate research assistants and were entered into a secure database to be analyzed.

## **Analysis**

### **Primary Hypotheses**

#### ***Hypothesis 1***

To test the hypothesis that trainees' knowledge of CARE skills increased from pre-workshop to both one day and one month after training, we conducted 3 paired-samples t-tests comparing the scores on the CARE quiz across the 3 time points.

#### ***Hypothesis 2***

To assess whether greater knowledge of CARE and greater perceived effectiveness at the conclusion of the workshop had higher levels of self-reported use of CARE skills protocol at one-month follow-up, a simultaneous linear regression was conducted.

### ***Hypothesis 3***

If the two predictor variables, perceived effectiveness of CARE and knowledge of CARE, were significantly related to the outcome variable, usage of the CARE skills, as evidenced by the simultaneous regression, then we would have conducted mediation analyses in MPlus (Muthen & Muthen, 2017) to determine if perceived effectiveness of CARE partially mediated the relationship between knowledge of CARE and use of CARE. All significant results were determined at the .05 level.

### **Exploratory Hypothesis**

#### ***Hypothesis 4***

To assess group differences in CARE knowledge both before and after completion of the workshop, a one-way ANOVA was conducted comparing pediatricians' average CARE Quiz scores at all three time points to non-pediatricians' average scores.

### **Descriptive Statistics**

Overall, the current study recruited 161 participants from 5 different CARE workshops. However, at time 2, the number of participants dropped to 68 and then dropped again to 41 at time 3. Their ages ranged from 22 – 74 years old ( $M = 43$ ) and 95.6% identified as female. Of the 161 participants, 60.5% were Caucasian, 33.8% were African American, 2.5% were Latinx, 1.3% were Asian, and 1.9% identified as “other.” The majority of the sample reported that they worked in a place other than a hospital or private practice (73%), whereas 6.6% worked in a hospital and 13.8% worked in private practice.



## Results

### Data Analysis

Prior to conducting the main statistical tests of the current study, all 6 variables were analyzed for normality. The knowledge of CARE at time 1 and time 2 variables were both slightly skewed, however the knowledge of CARE at one-month follow-up was not. Despite the violation of normality, the paired-samples *t*-test was determined to be robust enough to conduct the analyses given that the skewness was not severe and that the sample sizes were all over 30 data points (Stonehouse & Forrester, 1998). The knowledge of CARE at time 2, perceived effectiveness of CARE at time 2, and the 2 variables used to measure use of CARE skills at time 3 did not violate any assumptions of regression, including collinearity, normality, and homoscedasticity.

### Psychometric Properties of the Perceived Effectiveness Evaluation, CARE Quiz, and Use of CARE Surveys

#### *Internal Reliability of the CARE Quiz*

Although there are no published or unpublished studies that examine the psychometric properties of the novel CARE quiz, there are studies that explored and provided support for the psychometrics of the PCIT quiz, which is the original form of the adapted CARE quiz (Lee, Wilsie, & Brestan-Knight, 2011). The current study analyzed the internal reliability of the CARE quiz using pre-workshop data. A reliability analysis was conducted on the knowledge of CARE measure, the CARE quiz, and the detailed results can be found in Table 1. The measure showed excellent reliability ( $\alpha = .901$ ,  $M = 5.669$ ,  $SD = 4.400$ ) and there were no items that significantly altered the Cronbach's alpha upon removal. Based on these results, the CARE quiz

appears to be an internally reliable measure that does not need any alterations to its 15 items at this time.

### ***Internal Reliability of the Perceived Effectiveness Evaluation***

Reliability analyses were also conducted on both versions of the CARE Evaluation at time 2 and time 3 of the study. The CARE Evaluation measured the trainees' perceived effectiveness both one day and one month after completing the CARE workshop. The measure showed excellent internal reliability at Time 2 ( $\alpha = .921$ ,  $M = 34.386$ ,  $SD = 4.926$ ) and there were no items that greatly affected the Cronbach's alpha with its removal.

The alternate version of the CARE Evaluation administered one month after the workshop had similar internal reliability ( $\alpha = .922$ ,  $M = 34.923$ ,  $SD = 3.564$ ). Once again, no specific items emerged as significantly altering Cronbach's alpha with its removal from the measure. Results of the reliability analyses for both versions of the CARE Evaluations can be found in Table 2.

### ***Internal Reliability of the Use of CARE Measures***

To measure the trainees' use of CARE, two different measures were used. The first measure was derived from two items from the CARE Evaluation at one-month follow-up and the second measure, the Use of Skills Survey, was designed during data collection to offer more detailed information about usage. Reliability analyses were only conducted on the first measure due to a small sample size for the second measure ( $n = 12$ ). The two-item CARE Usage measure had unacceptable internal reliability ( $\alpha = .381$ ,  $M = 5.135$ ,  $SD = 1.378$ ) at one-month follow-up. Because this measure was composed of only two items, the removal of either item did not change the internal reliability greatly.

## **Change in Knowledge of CARE**

Three paired-samples *t*-tests were conducted to examine the change in knowledge of CARE across the three timepoints and the results can be found in Table 4. The workshop trainees' average correct answers in percentages can be found in Table 3. Comparison of the trainees' percentage of correct answers from pre-workshop to one-day post-workshop revealed a 6.67-point increase ( $t(51) = -10.700, p < .001$ ). Workshop trainees maintained this increase in CARE Quiz scores from pre-workshop to one-month post-training with a 5.97-point increase ( $t(30) = -7.268, p < .001$ ). However, there was also a significant 1.21-point decrease between average percentage of correct answers from one-day to one-month post-training ( $t(32) = 3.835, p = .001$ ).

## **Exploratory Hypothesis: Differences in Knowledge of CARE Between Groups**

An additional one-way ANOVA was conducted to compare pediatricians' and non-pediatricians' average CARE quiz scores at all 3 time points and resulted in a significant result at time 1 ( $F(1, 125) = 168.37, p < .001, r = .76$ ). Specifically, pediatricians ( $M = 13.35, SD = 1.34$ ) performed significantly better on the CARE quiz at time 1 compared to non-pediatricians ( $M = 4.23, SD = 3.08$ ). The groups performed similarly at time 2 and time 3 and the analyses were not significant.

## **Regression of Knowledge of CARE and Perceived Effectiveness of CARE at Time 2 on Use of CARE at Time 3**

A multiple linear regression was calculated to predict trainees' self-reported use of CARE skills one month after the workshop as measured by the CARE Evaluation Follow-Up measure based on their knowledge of CARE and perceived effectiveness of CARE at one-day follow-up. Results indicated that knowledge of CARE and perceived effectiveness of CARE one day after the workshop did not significantly predict the trainees' self-reported use of CARE one month

after the workshop ( $R^2 = .078$ ,  $F(2, 27) = 1.138$ ,  $p = .335$ ). Because the initial regression of predictor variables on use of CARE skills was not significant, the proposed subsequent mediational analyses were not conducted. Of note, the current study was unable to regress the 2 predictor variables on the more detailed measure of use of CARE skills (i.e., Use of Skills Survey) due to the small available sample size ( $n = 7$ ).

### **Discussion**

The current study sought to assess the effectiveness of CARE workshops with a variety of measures, including change in knowledge of CARE, the participants' perceived effectiveness of the learned skills, and their subsequent self-report of their usage of the skills. Specifically, it aimed to test the relationship between knowledge and perceived effectiveness of CARE with use of the CARE skills. The study was also used to analyze the internal reliability of the CARE Evaluation, CARE Quiz, and the two-item CARE Usage measure. The study demonstrated excellent internal reliability for both the CARE Evaluation and the CARE quiz, however the two-item CARE Usage measure had poor internal reliability.

In terms of the main hypotheses, our first hypothesis that trainees' knowledge of CARE would increase from pre-workshop to both one-day and one-month post-workshop was supported. Of note, the trainees' average score increased 6 points from pre-workshop to one-day after and these gains remained fairly constant one-month later, with only a 1-point decrease between one-day and one-month post-workshop. These results add to the growing CARE literature with insight into a previously untested factor of CARE training, the trainees' acquisition of knowledge. To date, all published studies on CARE focus on the self-reported or observed change in child behavior and parental use of the CARE skills. No other study has investigated how effective CARE workshops are in teaching trainees new information about the

CARE skills. Therefore, the results of this study are important to show that CARE workshops provide information about CARE in a way that is easily acquired and retained by trainees. Despite the new, significant results, it is notable that even one-day after the workshop, the trainees only averaged a “high B” grade (or 88.53% correct) on the CARE Quiz, which then decreased to a “low B” grade (or 81.14% correct) at one-month post-workshop. Conducting a cursory, qualitative examination of the data, it appears that more detailed-oriented items (e.g., identifying the amount of time allowed in CARE for children to comply with a command) and items that required accurate distinction between the skills (e.g., accurately identifying an example of a paraphrase versus a specific praise) were more challenging to the trainees than other less detail-oriented items. Based on these results, it is suggested that certified CARE facilitators spend extra time discussing the specific details of the CARE procedure, especially when talking about how to give commands to children and when explaining the similarities and differences between the “P skills.” Another suggestion is that the finer details may be more memorable if they were presented via a mnemonic device in a manner similar to how the Ps and Qs are presented during the workshop. It also might be helpful if presenters use more video-recorded examples to demonstrate the skills to workshop attendees. Presenting the information in a catchier, more consumer-friendly way may help improve acquisition and retention of information presented during the CARE workshops.

Our second hypothesis that greater knowledge and perceived effectiveness of CARE predicted greater usage of the CARE skills was not supported by the current study. The preliminary results of the present study suggest that there may be a relationship between knowledge and perceived effectiveness of CARE with usage of the CARE skills, however the two-item CARE Usage measure was not adequate to assess true usage because it was not

internally reliable. The internal reliability of the measure was most likely affected by an inadequate number of items to accurately capture trainees' use of the CARE skills. Another measure of use of CARE skills, the Use of Skills Survey, was developed midway through the study and may be a more promising measure, however, the sample size was too small to conduct any internal reliability analyses. Exploratory analyses were conducted on the measure and the means of the six items of the Use of Skills Survey, which can be found in Table 5, depicted slight increases in the usage of the Ps of CARE across the three timepoints. Conversely, the Qs of CARE had a slight decrease in use from pre-workshop to one-day post-workshop, but increased again one-month post-workshop. Notably, from these exploratory analyses, it appears that trainees find it easier to remember what to do (i.e., the Ps), but have more difficulty recalling what to avoid (i.e., the Qs) during interactions with children and adolescents. To help maintain the increase of the Ps and the decrease of the Qs, refresher conference calls or reminder emails may be employed to reinforce the information taught at the CARE workshops. Additionally, CARE facilitators could review the CARE Quiz with the trainees to identify and address barriers they experienced during and after the workshop in relation to CARE.

The other published CARE studies all reported increases in the use of CARE skills and the exploratory results from the Use of Skills Survey appear to be following this same general trend (Schilling et al., 2017; Messer et al., 2018). Notably, because the other studies were examining the effect of CARE on caregivers and their children, common parent measures used to assess behavior patterns of one child (e.g., the ECBI, the CBCL, etc.) were used in these previous studies (Eyberg & Ross, 1978; Wood et al., 2017). However, these child-specific measures would not suffice when measuring the general change in interactional style between our non-caregiver trainees and the large number of children with whom these professionals

interact with in the workplace. A more general measure that examines the overall effect of the CARE skills on the professional's child clientele would need to be utilized in the future. Alternatively, direct observation of non-caregiver CARE trainees and a child could be utilized in future study of workshop skill generalization.

Our third main hypothesis that perceived effectiveness of CARE would mediate the relationship between knowledge of CARE and usage of the CARE skills was also not supported by the current study. Because perceived effectiveness and knowledge of CARE were not significantly related to CARE skills usage, the mediational analyses could not be conducted. As previously discussed, the two-item CARE Usage measure lacked internal reliability and therefore, most likely affected the results of the study, including hypothesis 3. If future research with the Use of Skills Survey reveals that it is a reliable and valid measure, then it may be used to help elucidate the relationship between perceived effectiveness, knowledge, and use of the CARE skills.

Regarding the post hoc exploratory hypothesis, our prediction that pediatricians would have more knowledge of the CARE skills as measured by the CARE Quiz compared to non-pediatricians was partially supported. Specifically, pediatricians performed significantly better than non-pediatricians prior to completing the workshop, however both groups performed similarly both one day and one month following the workshop. These results suggest that non-pediatricians may be less likely than pediatricians to have previous exposure to PMT skills prior to completing the CARE workshop. However, once the non-pediatrician group completed the workshop, their knowledge acquisition and retention were similar to pediatricians previously trained in PMT skills. A previous study that examined the differences between didactic and experiential PCIT training workshops also found a similar difference between trainees based on

their educational background. Specifically, the study reported that the trainees with an MSW degree were more likely to perform at the expected level of the PCIT skills than those with MA or MS degrees (Herschell, 2004). To further examine this potential difference in graduate curriculums, future research could examine the differences in CARE knowledge between social workers, who also have more PMT information integrated in their programs, and non-social workers. In contrast, these results could also be indicative of differences in test-taking behaviors between groups.

This study was the first to evaluate CARE within the professional population, analyze change in self-reported knowledge of CARE, and use self-reported perceived effectiveness data. The results of this study also support the initial psychometrics of several CARE-relevant measures that can be used for future CARE program evaluation. To date, very little research has been conducted on CARE outcomes and there are no published studies on CARE with non-caregiver professionals. The results of this study also illustrate that non-caregiver trainees can significantly increase their knowledge of the CARE skills by completing the workshop, however the extent to which these trainees also use the CARE skills in their professional settings is difficult to determine based on the results of the current study.

Additionally, this study utilized feedback in an attempt to decrease participant attrition through a procedure that informed the trainees of their group's average on the CARE quiz at the end of the workshop for the last two workshops. This additional feedback decreased the attrition rate from time 1 to both time 2 and time 3. Specifically, a total of 111 trainees participated in the first 3 workshops but there was a 57.66% ( $n = 47$ ) attrition rate from time 1 to time 2 for this first cohort. Additionally, 74.78% of the trainees from the first 3 workshops dropped from time 1 ( $n = 111$ ) to time 3 ( $n = 28$ ). In comparison, there was only a 25% attrition rate from time 1 ( $n = 28$ )



to time 2 ( $n = 21$ ) and a 53.56% attrition rate from time 1 to time 3 ( $n = 13$ ) for the group of trainees who received the extra motivational piece of finding out what their performance was on the CARE quiz at the end of the CARE workshop. Based on these results, it appears that providing basic feedback about the group's CARE quiz average at the end of a workshop aids in participant retention for a one-month longitudinal data collection period.

### **Limitations and Conclusions**

The current study had a number of limitations with the first being the high attrition rate across the 3 time points. Specifically, there were 161 participants at time 1 and the number of participants at time 3 dropped to 41. Therefore, the study's results may have been affected by this high attrition rate because a certain type of participant (i.e., those not as engaged in the workshop) may have more consistently dropped out of the study or because trainees were not motivated to participate in the longitudinal aspects of the study. If the attrition of participants was not truly random, then the increase in knowledge of the CARE skills may have been overrepresented.

Finally, the two-item CARE Usage measure found in the CARE Evaluation was shown to be unreliable for the sample and, therefore, made it difficult to fully address our hypotheses (hypotheses 2 and 3) that perceived effectiveness and greater knowledge of CARE would relate to trainee-reported use of CARE skills. Unfortunately, due to the COVID-19 pandemic, data collection for this project was cut short and affected further data collection for the Use of Skills Survey. As such, the sample size of participants who completed the Use of Skills Survey was extremely small and the resultant psychometrics of the measure were likely compromised. This measure may be used in future study as a self-report measure of use of CARE skills by non-caregiver trainees if it is shown to be reliable and valid with subsequent study. Previous CARE

research has used psychometrically sound measures designed for parents and caregivers of one child, however the Use of Skills Survey could provide a new type of measure designed specifically for non-caregivers who interact with numerous children on a daily basis. Data obtained by using this measure may also inform CARE facilitators on how to make the workshops more effective. Future study should develop the psychometrics of these measures or develop other measures that might help to elucidate the mechanisms of change for CARE trainings.

### **Future Directions**

Given the applicability of the CARE skills to adult-child interactions, there are quite a few groups that could benefit from CARE trainings. Future directions in CARE research should aim to expand its reach to other populations not targeted by past research, such as nursing students, undergraduates who hope to enter child-oriented careers, and child mentors. Future research should also aim to examine CARE dissemination and implementation with people from ethnically and racially diverse backgrounds. The current study had a fairly diverse sample with 33.8% of participants identifying as African American, 2.5% as Latinx, 1.3% as Asian and 60.5% as Caucasian. With one-third of the sample identifying as African American, the results of this study suggest that the CARE skills can be implemented effectively in diverse populations, however future study in this area is warranted. Further, research has shown that PMT programs can also be effectively utilized with non-White populations (Bjorknes et al., 2012; Miranda et al., 2005; McCabe et al., 2005), however future research should continue to examine the effectiveness of CARE with the BIPOC population. One area, in particular, that will be important to explore in the future is how CARE trainers can incorporate more inclusive training

practices (e.g., videos and examples used during presentation) and wider access to the materials for trainees and trainers of color.

Future research should also be conducted to help determine the most effective packaging of the CARE skills so that the trainings can become more standardized and the trainees can better retain knowledge presented in the workshops. As previously discussed, the current study reported a significant increase in knowledge of CARE that remained even 1 month after the workshop, however there was a slight, yet significant decrease in CARE knowledge from one-day post-workshop to one-month follow-up. Based on these results, it may be helpful for trainees to receive a check-up email or call from the workshop facilitator to reinforce their knowledge one month after the training similar to the facilitator conference calls that have been recently introduced. Additionally, the creators of CARE have begun to standardize the process of becoming a CARE facilitator by making it mandatory that certified facilitators attend a 3-hour CARE facilitator training (Messer et al., 2018). This standardized training of CARE facilitators is expected to also standardize CARE trainings and trainees' results.

Another approach to future research could include behavior observations of the professional and a client prior to and following CARE training. For example, young adults participating in a mentoring program (during which an adult mentor and child mentee interact on a one-on-one basis) may also be utilized in the future to measure behavioral change following CARE training. Previous work has been conducted on PCIT-related prevention projects (Brooks, 2011; Lee, Wilsie, & Brestan-Knight, 2011) and results are promising. However, it will be important to determine whether CARE training can be evaluated with professionals in training or college student mentors and whether adult-child interactions improve following CARE training.

Previous research has also shown that there are large discrepancies between self-reported and observed child behavior problems and negative parenting (Moens et al., 2018). Specifically, parents who reported higher instances of child problem behavior and negative parenting had larger discrepancies with the lower observed instances of negative child behavior and parenting behaviors (Moens et al., 2018). No published studies have looked at the differences between self-reported versus observed use of the CARE skills; however, Messer et al. (2018) utilized the DPICS-IV to observe parent usage of the CARE skills and Schilling et al. (2016) used self-reports of parent skill usage. Messer et al. (2018) found a significant increase in the Ps and a decrease in the use of the Qs from pre to post workshop. Schilling et al.'s study resulted in similar, yet insignificant findings. These studies suggest that there is a potential discrepancy between observed versus self-reported use of the CARE skills and this difference should be accounted for when designing future CARE studies with a professional sample.

Even though this study was the first to offer insight into the effect of CARE training with professionals, it is worth noting that there are additional directions for future research when considering CARE training for caregivers and their children. Previous research has shown how important and impactful prevention models, like Triple P and CARE, can be on children with subthreshold clinical symptoms. CARE may also be used to supplement ongoing therapeutic services or prime families on waitlists prior to receiving more intensive therapy. For example, CARE may help provide an overview of skills to use at home for parents who are on a PCIT waitlist. Once these parents are able to start PCIT, it is possible that their prior exposure to the behavioral skills through CARE may help to shorten their time to PCIT treatment completion once they begin services. Conversely, many children may not need additional services once their parents have been CARE trained and implement the skills daily. As CARE continues to be

widely disseminated, researchers should look at the relationship between CARE and other more intensive PMTs and their most ideal sequencing. Once professionals know more about the relationship between PCIT and CARE, then they may be able to make better informed recommendations tailored for each family.

Overall, CARE has proven itself to be a very promising prevention model. Previous studies suggests that CARE can help to improve child-caregiver relationships and the current study suggests that non-caregivers can learn the CARE model and retain information regarding the skills over time.

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Appendix A

Trainee Background Information

(circle all that apply)

Age: \_\_\_\_\_

PsyD

PhD

Gender: Male  
Female

Other: \_\_\_\_\_

Race/Ethnicity: American Indian or Alaska  
Native

Asian

Black or African American

Hispanic or Latino

Native Hawaiian or Other Pacific

Islander

White or Caucasian

Other

Place of Employment:

Hospital

Private Practice

Other: \_\_\_\_\_

Year highest degree was completed:

\_\_\_\_\_

Education: High School Only

AA

BA

M.A. or M.S.

MD

Years of experience working with children and/or families: \_\_\_\_\_

Number of years in current position: \_\_\_\_\_

Have you had any previous experience with Parent-Child Interaction Therapy (PCIT)?

\_\_\_\_\_

Trainee Contact Information  
(for part 2 and part 3 of the study)

Name: \_\_\_\_\_

Email: \_\_\_\_\_

## Appendix B

### Use of Skills Survey

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Always**

	<b>How often do you engage in these behaviors?</b>				
	Never	Seldom	Sometimes	Often	Always
1. I praise a child for their appropriate behavior:	1	2	3	4	5
2. I reflect what a child says:	1	2	3	4	5
3. I describe what a child is doing:	1	2	3	4	5
4. I instruct a child to do something:	1	2	3	4	5
5. I ask a child questions:	1	2	3	4	5
6. I tell a child what not to do:	1	2	3	4	5



## Appendix C

### Child Adult Relationship Enhancement (CARE) Evaluation Post-Workshop

Please rate the CARE training by checking one number in each category.

1) The **3 Ps skills** can be useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

2) The **information about the Q's** can be useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

3) The **Ignore skills** can be useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

4) I have learned **new approaches** to using praise (i.e., making praises specific, praising behaviors I want to see more of) that I have not previously used.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

5) I have learned **new approaches** to describing a child's behavior (i.e., pointing out what the child is doing) that I have not previously used.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

6) I have learned **new approaches** to paraphrasing a child's appropriate talk (i.e., paraphrasing to enhance language skills) that I have not previously used.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

7) I feel comfortable implementing the CARE skills on my own.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

8) The elements of **giving good commands** can be useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

9) I can use my CARE skills on a daily basis:

1	2	3	4
strongly disagree	disagree	agree	strongly agree

10) I have learned **new approaches** to giving good commands (e.g., making commands direct, specific, positively stated, etc.) that I have not previously used.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

11) The specific setting and population I work with:

12) Comments:

## Appendix D

### Child-Adult Relationship Enhancement (CARE) Follow-Up Evaluation

Please rate the CARE training you received last month by checking one number in each category.

1) The **3 Ps skills have been** useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

2) The **information about the Qs** has been useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

3) The **Ignore skills** have been useful in my setting.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

4) The **CARE approach** to using praise (i.e., making praises specific, praising behaviors I want to see more of) has been useful.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

5) The **CARE approach** to describing a child's behavior (i.e., pointing out what the child is doing) has been useful.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

6) The **CARE approach** to paraphrasing a child's appropriate talk (i.e., paraphrasing to enhance language skills) has been useful.

1	2	3	4
strongly disagree	disagree	agree	strongly agree

7) I feel comfortable implementing the CARE skills on my own.

1	2	3	4
---	---	---	---

strongly disagree      disagree      agree      strongly agree

8) The elements of **giving good commands** have been useful in my setting.

1                              2                              3                              4  
strongly disagree      disagree      agree      strongly agree

9) I use my CARE skills on a daily basis with young children:

1                              2                              3                              4  
never                              sometimes      often                              always

10) I use my CARE skills on a daily basis with adolescents:

1                              2                              3                              4  
never                              sometimes      often                              always

11) The CARE **approach** to giving good commands (e.g., making commands direct, specific, positively stated, etc.) has been useful.

1                              2                              3                              4  
strongly disagree      disagree      agree      strongly agree

12) I have seen a positive change in my interactions with children (increased positive child behavior) as a result of my CARE skills.

1                              2                              3                              4  
strongly disagree      disagree      agree      strongly agree

13) I have seen a positive change in my interactions with children (decreased negative child behavior) as a result of my CARE skills.

1                              2                              3                              4  
strongly disagree      disagree      agree      strongly agree

## Appendix E

### CARE Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. CARE is an acronym that stands for:
  - a. Children and Adults Reading Emotions
  - b. Children Are Real Enigmatic
  - c. Child-Adult Relationship Enhancement
  - d. Child-Adult Relationship Enjoyment
  
2. You and a child are playing with toy animals and the child says, "I've got a moo cow."  
An example of paraphrase you could use is:
  - a. You are playing so nicely with your moo cow
  - b. What comes from cows
  - c. I have a goat
  - d. You do have a brown and white cow
  
3. Which of the following should you avoid doing when using the CARE skills with a child:
  - a. Doing what the child is doing
  - b. Asking the child about what they are doing
  - c. Describing what the child is doing
  - d. Being genuine
  
4. When using the CARE skills with a child, it is important for you to:
  - a. Lead the play
  - b. Make sure the focus is on what you are doing
  - c. Show you are interested by asking questions
  - d. Let the child know that what he or she is doing is interesting
  
5. What do the 3 Ps stand for?
  - a. Peace, Permission, and Plentitude
  - b. Positive, Praise, and Pointing
  - c. Praise, Paraphrase, and Pointing out Appropriate Behavior
  - d. Parents, Pointing out Any Behavior, and "Parachuting In"
  
6. According to CARE, which of the following **is** an appropriate statement to make during an interaction with a child
  - a. "You are using green blocks to build a house
  - b. "Let's play with the animals, ok?"
  - c. "The sky is not purple."
  - d. "Come play with me."
  
7. Which of the following is **NOT** a benefit derived from using the 3 Ps?
  - a. Improves children's self-esteem
  - b. Enhances children's visual acuity

- c. Enhances the relationship between the adult and child
  - d. Has a calming effect on the child
8. A specific praise is preferred over a nonspecific praise because:
- a. It tells the child exactly what he or she did that was good
  - b. It sounds nicer
  - c. It is shorter
  - d. It is more enthusiastic
9. You are interacting with a child, and she starts to whine. An appropriate response encouraged by CARE would be:
- a. Saying to the child, "Stop whining."
  - b. Turn away from the child until she is behaving appropriately.
  - c. Take all the toys away from the child and say, "Sit quietly while I play nicely with the toys."
  - d. Smack the child on the hand and say, "We do not whine."
10. Which of the following is an example of the type of praise encouraged in the CARE program?
- a. "Excellent!"
  - b. "You are awesome!"
  - c. "Great job sitting still on the chair!"
  - d. "You are so sweet!"
11. In the CARE program, we allow children \_\_\_\_\_ to comply with a command.
- a. 5 seconds
  - b. 10 seconds
  - c. 15 seconds
  - d. 30 seconds
12. You should give the child an explanation for your command \_\_\_\_\_.
- a. before the command is given
  - b. after the command is given
  - c. while the child is deciding whether or not to comply with the command
  - d. A & B only
13. It is important that commands are \_\_\_\_\_.
- a. Specific
  - b. Given one at a time
  - c. Provided in a neutral tone of voice
  - d. All of the above
14. Which of the following is a good direct command?
- a. Would you like to sit down?
  - b. Hand me the block.
  - c. How about we clean up these toys?
  - d. Will you hand me that block?

15. If a child obeys your command you should

- a. Give the child a sticker
- b. Give the child another command immediately
- c. Give the child a praise
- d. Give the child a labeled praise

**Table 1.** Internal Reliability Statistics for the Recoded CARE Quiz at Time 1

Reliability Statistics		Scale Statistics		Summary Statistics of Inter-item Correlations		
N	Cronbach's $\alpha$	Mean	Standard Deviation	Mean	Min/Max	Range
127	.901	5.669	4.400	.380	-.084/.924	1.008



**Table 2.** Internal Reliability Statistics for the CARE Evaluation at Times 2 and 3, Measuring Trainee Perceived Effectiveness

	Reliability Statistics		Scale Statistics		Summary Statistics of Inter-item Correlations		
	N	Cronbach's $\alpha$	Mean	SD	Mean	Min/Max	Range
Time 2	70	.921	34.386	4.926	.543	.352/.883	.531
Time 3	39	.922	34.923	3.564	.521	.095/.947	.853

**Table 3.** Average Score on CARE Quiz at Each Time Point in Percentages

Time Point	Average Score (%)
Pre-Workshop	37.795%
One-Day Post-Workshop	88.529%
One-Month Post-Workshop	81.138%

**Table 4.** Comparisons of Mean Scores on CARE Quiz Across 3 Time Points

Time Points Compared	Mean	<i>t</i> value	<i>p</i> value
Pre-Workshop & 1-Day Post-Workshop	-6.673	-10.700	< .001
1-Day Post-Workshop & 1-Month Follow-Up	1.212	3.835	.001
Pre-Workshop & 1-Month Follow-Up	-5.968	-7.268	< .001

**Table 5.** Mean Values of Use of Skills Survey Items Across All 3 Timepoints

Survey Item	Pre-Workshop <i>n</i> = 12	One-Day Post-Workshop <i>n</i> = 10	One-Month Post-Workshop <i>n</i> = 7
Use of Praise	4.00	4.10	4.29
Use of Paraphrase	3.50	3.70	3.86
Use of Point Out	3.25	3.60	3.57
Use of Commands	3.75	3.40	3.57
Use of Questions	3.67	3.50	3.57
Use of Criticisms	3.00	2.80	3.14

*Note.* Participants reported their usage of each item above on a scale of 1 (Never) to 5 (Always).

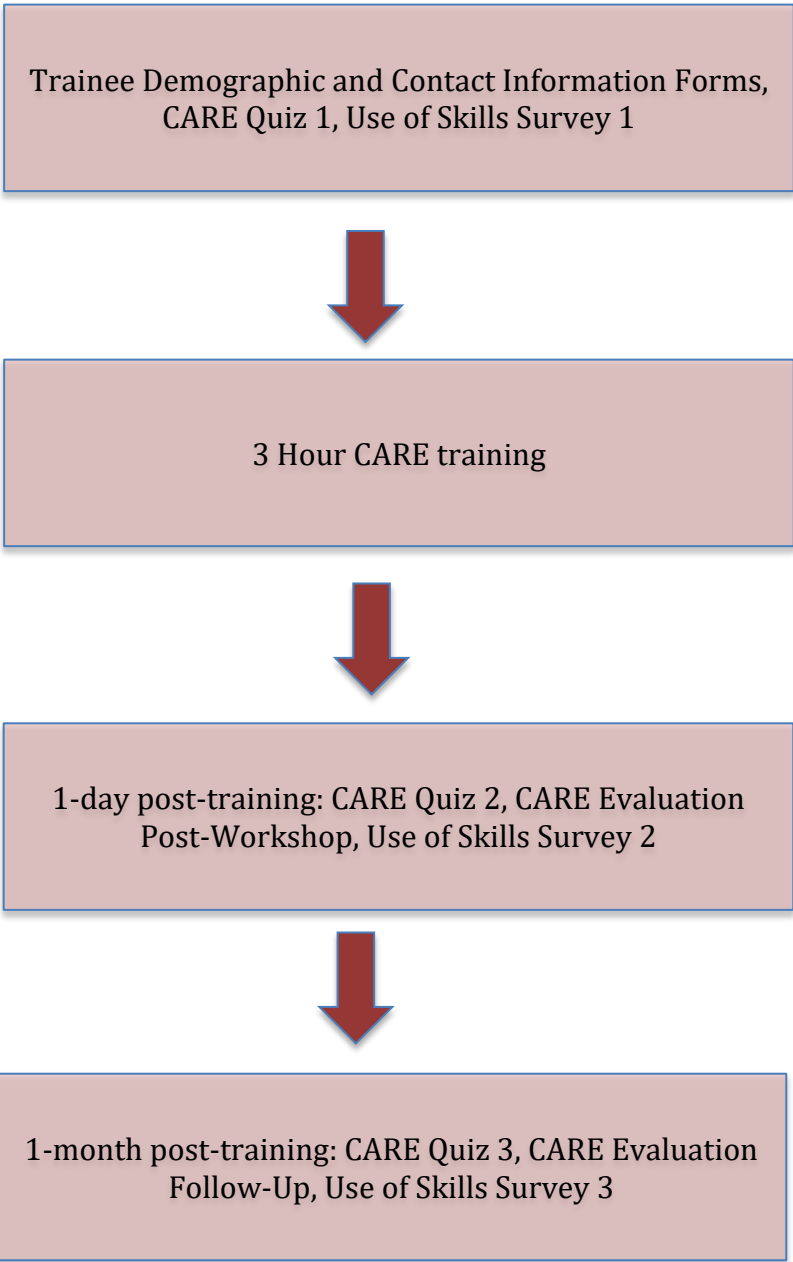
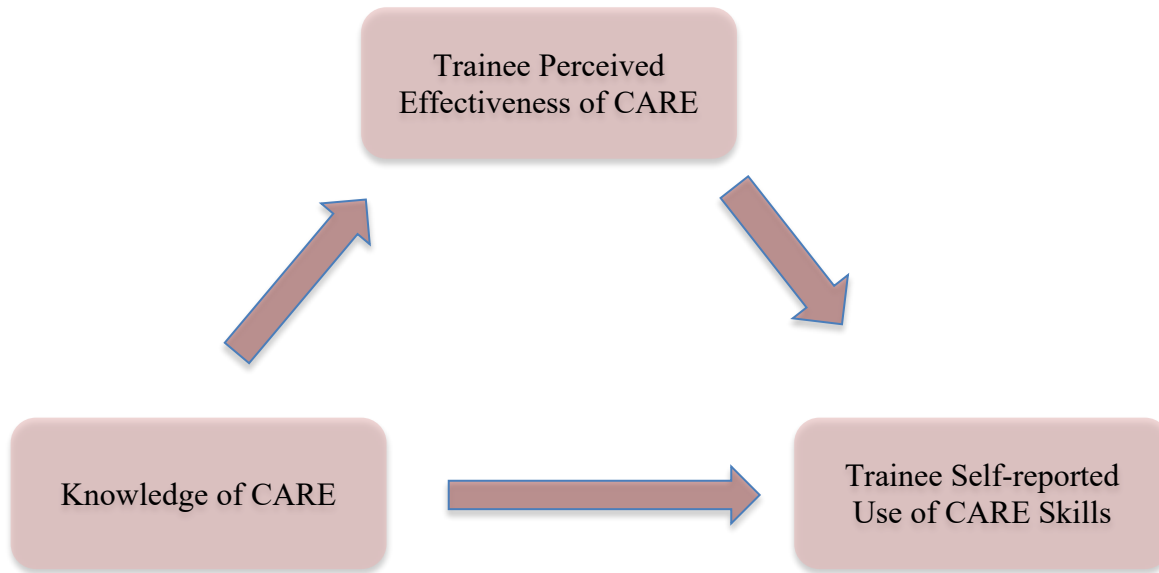


Figure 1. Flowchart of Procedures



*Figure 2.* Mediation model depicting trainees' perceived effectiveness of CARE partially mediating the relationship between trainees' knowledge of CARE and their self-reported usage of the skills.