University of Nevada, Reno

Child Sexual Abuse Interviewing: Development and Pilot Testing of a Forensic Training

A dissertation submitted in partial fulfillment of the requirements for

the degree of Doctor of Philosophy in Psychology

by

Olga Cirlugea

Dr. William O’Donohue/ Dissertation Advisor

August 2017
THE GRADUATE SCHOOL

We recommend that the dissertation prepared under our supervision by

OLGA CIRLGUEA

Entitled

Child Sexual Abuse Interviewing: Development And Pilot Testing Of A Forensic Interviewing Training

be accepted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

William O'Donohue, Ph.D., Advisor

Anthony Papa, Ph.D., Committee Member

Lorraine Benuto, Ph.D., Committee Member

Marian Berryhill, Ph.D., Committee Member

William Evans, Ph.D., Graduate School Representative

David W. Zeh, Ph.D., Dean, Graduate School

August, 2017
Abstract

Limited research has been conducted that evaluates trainings in child sexual abuse interviewing in spite of their wide use to distribute knowledge and train those interviewing children who may have been sexually abused. Thus, the purpose of this study was to develop and test an online forensic interviewing training based on the following evidence-supported principles of child sexual abuse. The study consisted of both content validation and a subsequent pilot study. Five experts were enlisted to review the script of the training on domains important to forensic interviewing (specifically, in forensic interviewing, child sexual abuse, training, cultural competence, and the law), demonstrating the acceptability of the training. Results of the content validation indicated that all experts determined that the training was acceptable and feasible, and feedback provided by experts was used to revise the training appropriately. Because a thorough review of the literature has identified no assessment instruments for evaluating interviewer knowledge and application of interviewing principles after undergoing a child sexual abuse interviewing training, a Forensic Interviewing Knowledge Questionnaire was developed to assess forensic interviewing principle knowledge and application. The Interviewing Knowledge Questionnaire was used to evaluate the training in a pilot study with two conditions, Training and Control. Results indicated that participants in the training condition demonstrated significantly higher interviewing knowledge than the control group as measured by our Forensic Interviewing Knowledge Questionnaire, and rated the training highly on a measure of training satisfaction. This study began to address some shortcomings of existing forensic interviewing trainings; however, it also
highlighted a continued need to evaluate trainings and to answer important question such as whether trainings produce interviews that conform to the protocol or guidelines.
Dedication

This dissertation is dedicated to my mother— the brightest, strongest, and most caring individual I know. I could not have done this without your love and support.
# TABLE OF CONTENTS

TABLES........................................................................................................................................v

CHAPTER

1. INTRODUCTION ..........................................................................................................................1
   THE PROPOSED STUDY ..............................................................................................................6
   HYPOTHESES ............................................................................................................................33

2. METHODOLOGICAL APPROACH ..............................................................................................34
   PARTICIPANTS AND RECRUITMENT .......................................................................................34
   STUDY PROCEDURES ..............................................................................................................37
   MEASURES ...............................................................................................................................42
   DATA PLAN ...............................................................................................................................45

3. RESULTS ....................................................................................................................................46
   HYPOTHESIS TESTING ............................................................................................................46

4. DISCUSSION ................................................................................................................................57
   STRENGTHS ..............................................................................................................................67
   LIMITATIONS ...........................................................................................................................68
   FUTURE DIRECTIONS ...............................................................................................................70

5. REFERENCES ...............................................................................................................................75

6. APPENDIX 1. FORENSIC INTERVIEWING KNOWLEDGE QUESTIONNAIRE ..............................................................................................................................97
LIST OF TABLES

1. Evaluation of Existing Forensic Interviewing Trainings........................................3
2. Areas of Overlap Between the Two Conditions.........................................................41
3. Results of Independent-Samples T-Tests and Descriptive Statistics for Forensic
   Interviewing Knowledge Questionnaire Scores at Pre and Post Assessment...........50
4. Results of Paired-Samples T-Tests and Descriptive Statistics for Forensic Interviewing
   Knowledge Questionnaire Scores for the Training and Control Conditions...........52
5. Results of independent-Samples T-Tests and Descriptive Statistics for Forensic
   Interviewing Knowledge Questionnaire Scores for Undergraduate and Graduate
   Students.........................................................................................................................53
6. Results of Paired-Samples T-Tests and Descriptive Statistics for Forensic Interviewing
   Knowledge Questionnaire Scores for Undergraduate and Graduate Students........54
7. Results of Module Analyses for the Training and Control Conditions..................54
8. Results of the Training Satisfaction Questionnaire.................................................56
CHAPTER 1. INTRODUCTION

Child Sexual Abuse Forensic Interviewing

Children who may have been sexually abused are interviewed by a variety of professionals using a variety of different interviewing methods in an effort to determine whether abuse has in fact occurred and to gather information about the alleged abused including type of abuse as well as when, where, and how many times the abuse occurred (see O’Donohue & Fanetti, 2016). The results of these interviews are often one of the most important pieces of information in both legal and clinical decision making, particularly because if abuse did occur the victim is typically the only witness to the crime.

There are several child sexual abuse interviewing protocols that are purportedly effective in overcoming interviewer bias - that is, bias towards a preconceived response based on what questions are asked (e.g., only abuse confirming ones) and how they are asked (e.g., through open-ended questions or more directive, closed-ended ones) in the interview. These include National Institute of Child Health and Human Development Investigative Interview Protocol (NICHD; Orbach et al., 2000, Lamb et al., 2007), the Ten Step Investigative Interview (Lyon, 2005), the RATAF Forensic Protocol (CornerHouse, 1990, 2003, 2007 as described in Anderson, 2007), the Step-Wise Protocol (Yuille, Hunter, Joffe, & Zaparniuk, 1983), and the APSAC Practice Guidelines for Forensic Interviewing in Cases of Suspected Child Abuse (American Professional Society on the Abuse of Children, 1995, 1997, 2002, 2011).

With the exception of the NICHD Interviewing Protocol, existing interview protocols lack basic psychometric properties (i.e., validity, reliability, sensitivity,
specificity) and none of the existing interview protocols have been subjected to peer review or to content evaluation by experts in areas that are relevant to child sexual abuse interviewing (e.g., child development, suggestibility, etc.) (Cirlugea & O’Donohue, 2016). This is problematic because as assessment instruments, child sexual abuse interviewing protocols ought to be subjected to the same psychometric testing that demonstrates validity (e.g., that inferences from the interview protocol performs are true) and reliability (e.g., if two interviewers used the same protocol with the same child they would get the same details, or if an interviewer utilized a protocol with a child in two forensic interviews he or she would also get the same information) the two fundamental principles of the scientific method. However, all of these forensic interviewing protocols are widely used, with the Ten Step Investigative Interview, NICHD Interviewing Protocol and the RATAF Forensic Protocol being the most frequently employed protocols in investigations of possible child abuse.

Even more alarming, outcome data on existing training programs are scarce (Cirlugea & O’Donohue, 2016). Thus, the field does not know the extent to which interviewers conform to the protocol in which they were trained. This is problematic because even with missing data on psychometric properties, protocols do generally follow the literature on child sexual abuse interviewing, although to various extents. For example, all protocols discourage the use of leading questions because of the suggestibility they introduce, while only some protocols practice ground rules before the interview, such as “I don’t know” responses and truth-lie discussions. Therefore, if interviewers do not follow the protocols on which they received training and instead “do
their own thing,” they risk introducing unnecessary bias into the interview and contaminating the child’s statement.

**Forensic Interviewing Trainings**

A review of the extant literature on child sexual abuse interviewing trainings revealed that most trainings have not been empirically evaluated. It is unclear how many trainings in forensic interviewing exist in the United States; however, well-known ones include the National Children’s Advocacy Center (NCAC) Forensic Interviewing of Children Training (http://www.nationalcac.org/forensic-interviewing-of-children-training), Cornerhouse Training (http://www.cornerhousemn.org/basicinterview.html), Child First Forensic Interviewing Training (http://www.firstwitness.org/child-forensic-interview-training/), NICHD Protocol Training (http://nichdprotocol.com/training-material/) and Stepwise Interview Training (http://theforensicalliance.com/services/workshops/the-step-wise-interview-guidelines-for-children-the-next-generation/). Of note, these do not include the smaller trainings that law enforcement personnel and other individuals who interview children undergo at their various law enforcement and social work agencies. Table 1. reviews the extent to which these trainings have been evaluated.

**Table 1.**  
Evaluation of existing forensic interviewing trainings

<table>
<thead>
<tr>
<th>Training</th>
<th>Has the training been evaluated?</th>
<th>Focus of the studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCAC</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Cornerhouse</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Child First</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>NICHD Protocol</td>
<td>Yes</td>
<td>Evaluated the training in regards to type of prompt</td>
</tr>
</tbody>
</table>
used by the interviewers following the training and whether continued supervision was necessary (Cyr et al., 2009; Lamb et al., 1996, 2002, 2009; Orbach et al., 2000; Sternberg et al., 2001).

| Stepwise Interview | Yes | Evaluated the training in regards to participant satisfaction, whether (participants used the protocol after the training, and whether subsequent interviews were adequate or inadequate (Yuille et al., 1983). |

The questions that would be of interest include: 1) To what extent does the training produce interviews that conform to the protocol or guidelines? Do the effects of the training on interviewer knowledge and behavior last—or is there observed drift over time? How expensive and efficient is this training? This not only includes the cost of the training itself but also travel, time off of work, and other costs. How satisfied are consumers with the training? What kinds of errors are most likely to occur? What does the content of the training need to be like—how much lecture vs supervised practice, for example? What prerequisites are needed? Is the training more effective for certain individuals or professionals than others?

That this information is missing is problematic as training is expensive and investigators are required to undergo training prior to being deemed competent to conduct forensic interviews with children. Moreover, this has an impact on the alleged offenders, victims, and the justice system as a whole. Several studies have been conducted on the
effects of training on the quality of forensic interviews utilizing the NICHD Investigative Interview Protocol and found that interviewers using the NICHD Investigative Interview Protocol performed significantly better than those not using a protocol as evidenced by using more open-ended prompts and fewer focused prompts as well as that more intensive training and subsequent supervision increased the quality of the forensic interview (Cyr et al., 2009, Lamb et al., 1996, 2002, 2009; Orbach et al., 2000, Sternberg et al., 2001). Additionally, Yuille and colleagues (1983) conducted a field study examining three aspects of the Step-wise protocol training and found that participants had a positive view of the training and that adequate information was provided, and most indicated they used the protocol sometimes to always and fewer of their interviews were deemed “inadequate” versus those in the control condition. No other studies were found that evaluated the effects of trainings on various outcome measures despite forensic interviewing being an integral part of child sexual abuse investigations. From the information presented above, we can deduce that empirical evidence is lacking with regard to 1) psychometric properties of forensic interviews; and 2) outcomes for attending/receiving training for forensic interviews.

Why Are Well-Researched Interviewing Trainings Necessary?

The problem that exists is the lack of empirically supported trainings for child sexual abuse interviewing. This is an issue because of the negative consequences of inadequate trainings that include poor outcomes for the children and the potential for false negatives (i.e., incorrectly determining that the child was not abuse and increasing the likelihood that a guilty perpetrator will not be released/not convicted) and false positives (i.e., incorrectly determining that the child was abused and increasing the
likelihood of convicting innocent people), that all negatively impact our justice system, preventing it from appropriately responding to crime (Rabinowitz, 2003, Wood & Garven, 2000). In spite of the many protocols used in the United States, only the NICHD Investigative Interview and Stepwise Protocol have evaluated the effects of their trainings on interviewer performance (Cirlugea & O’Donohue, 2016) and still many questions remain unanswered. Of the outcome literature that does exist regarding these protocols, most studies are focused on a small segment of interviewer behavior such as types of questioned asked, which is a necessary but not sufficient component of forensic interviewing. This represents a significant gap in the literature regarding whether these trainings do in fact improve the interviews conducted and change the interviewer behavior over time in the expected direction. Furthermore, the studies reviewed failed to evaluate the impact of important factors associated with trainings including cost (with some of these trainings costing up to $1365; Cornerhouse, 2017) and efficiency (e.g., time off work, time associated with travel to the training, accommodations, etc.). These problems reveal a need for the development of training around forensic interviewing principle with empirical support, and for the evaluation of such a training on basic principle knowledge and satisfaction.

The Proposed Study

The purpose of this study was to develop and pilot test an online forensic interviewing training based on the following evidence-supported principles of child sexual abuse interviewing:


Force on Child Abuse and Neglect & Department of Human Services, 2011)


These principles were explored over eight modules. These were selected because a) these are topics relevant to child sexual abuse interviewing that have guided research in the field of forensic interviewing for the past 30+ years; and b) a recent review of over 100 forensic interviews revealed that poor interviewing techniques continue to be used by forensic interviewers across several states (O’Donohue, Fanetti, Cirlugea & Vechiu, in progress). Additionally, almost none explored alternative hypotheses regarding questionable statements by the child such as inconsistent reporting, parental and caregiver suggestion, and logistically improbable details in the child’s narrative (further explained in a later section). What follows is a description, rationale, and empirical support.

**Introduction to Forensic Interviewing.** The first section provided the learner with the rationale for the development of this training, information regarding for whom the training was designed, and a brief summary of the modules.
Module 1: Implications of Child Development for Forensic Interviewing. This module addressed issues related to child development and forensic interviewing. Learning objectives included recognizing that children of the same age may be at different developmental levels (Super, & Harkness, 1986, Trickett, & McBride-Chang, 1995); understanding how communication, especially receptive and expressive speech is affected by developmental level (e.g., Wells, 1986, Werkman, Wigboldus, & Semin, 1999, Wimmer, & Perner, 1983); learning how to use age-appropriate questions with children (e.g., APSAC 1990, 1992, 1995, 2002, 2011); understanding how memory is affected by developmental level (e.g., Faller, 1996, Haden et. al., 2010, Nelson & Fivush, 2004, Price & Goodman, 1990, Principe & Ceci, 2002, Shapiro & Purdy, 2005); understanding how attention span is affected by developmental level (e.g., Cronch, Viljoen, Hansen, 2006, Hershkowitz, & Terner, 2007, La Rooy, Lamb, & Memon, 2011, Powell & Snow, 2007, Russell, 2006); and exploring how developmental disabilities affect a child’s development and therefore affect the forensic interview (e.g., Cederborg, Danielsson, La Rooy, & Lamb, 2009, Cederborg, & Lamb, 2008, Gudjonsson & Henry, 2003, Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007).

It is important for interviewers working with children to have a basic understanding of child development. Children are not just “little adults” and in addition to being more suggestible, children’s language, reasoning abilities, memory, and ability to sustain attention are all less developed than those of adults (Anderson et al., 2007). Although a child’s age is generally used to indicate the child’s developmental level, it would be unwise to assume that all 10-year-old children are at the same developmental level as some have developed faster and some slower. Thus, each child should be
approaches as an individual and an estimation of his or her developmental level should be obtained (Newlin et. al., 2015). This may be accomplished before the interview by speaking to the child’s parents, teachers, and doctors. During the interview the forensic interviewer can also ask the child to provide a free narrative on a pleasant or neutral event (e.g., last birthday party, what happened yesterday from the time the child woke up until he or she went to bed). The interviewer may start with open ended questions to gauge how much information the child is able to provide, and to assess whether he or she is able to answer certain questions. Differences in developmental levels indicated that certain types of questions may not be appropriate (e.g., “Why” questions for some children, or complex over simple questions) and that modifications may need to be made based on the child’s developmental level rather than chronological age (e.g., the interview ought to be shorter). Factors that may impact a child’s development include presence of a cognitive disability (Gudjonsson & Henry, 2003), gender (Hyde & Linn, 1988), ethnicity (Emerson, 2010), exposure to technology (Hatch, 2011, Radesky, Schumacher, & Zuckerman, 2015), parents’ educational level, (Ardila, Rosselli, Matute & Guajardo, 2005) etc. and all these may in turn influence a child’s ability to report on an experienced event. Additionally, certain factors vary with age including attention span, with older children better able to sustain their attention for longer, and ability to establish rapport, with children needing age appropriate interactions (e.g., favorite toys, how they got to the interview; Braaten, 2007), and older children such as teenagers having at times a more difficult time becoming comfortable with the interviewer. Thus, it was important for this training to include a section on child development and how developmental factors affect a child’s ability to report on past events.

The first study on suggestibility was conducted by Small (1896). Small opened a
bottle of clear liquid and asked children if they could smell the fragrance. What the children didn’t know was that the liquid was water. However, many of the children claimed that they could smell the fragrance. Suggestibility did not become popular until the high-profile day care cases in the 80’s and 90’s in which problematic interviewing techniques resulted in false child sexual abuse allegations and serious consequences for the alleged perpetrators (Ceci & Bruck, 1995, Rabinowitz, 2003). Dozens of studies have been since conducted on suggestibility and reveal that prevalence of suggestibility varies widely based on the age group used, with the general finding that younger children are more suggestible than older children, who are more suggestible than adults (for a review see Ceci & Bruck, 1995). Variability is due to manipulation used such as supportive vs. nonsupportive questioning (e.g., Almerigogna, Ost, Akehurst & Fluck, 2008, Almerigogna, Ost, Bull and Akehurst, 2007), rapport vs. nonrapport (e.g., Roberts, Lamb & Sternberg, 2004, Ruddock, 2006), absence or presence of truth-lie discussions (e.g., Bussey, 1992, Huffman, Warren, & Larson, 1999, Talwar, Lee, Bala & Lindsay, 2002), leading vs. other types of questions (e.g., Cassel, Roebers, & Bjorklund, 1996, Kwock & Winer, 1985, Principe & Ceci, 2002, Schaaf, Alexander & Goodman, 2008), social pressures (e.g., Garven, Wood, Malpass & Shaw, 1998, Schwarz & Roebers, 2006), and use of unsupported techniques such as anatomical dolls (e.g., Elliott, O’Donohue & Nickerson, 1993, Goodman & Aman, 1990).

Factors that may increase suggestibility can occur within or outside the forensic interview. For example, the interviewer may behave in a manner that introduces suggestibility by repeating the same question (thus causing the child to potentially change his or her answer), disconfirming the child’s response (once again, potentially eliciting a
different response from the child), reinforcing only responses that support that abuse has
taken place (thus teaching the child that only those responses are wanted). Other
individuals outside of the forensic interview, for example friends, parents, therapists, etc.
may also engage in conversations with the child that produce suggestibility. It is
important to note that in the absence of misleading information with biasing questions, all
children (i.e., of preschool, elementary, and high school age) are capable of providing
accurate reports (Fivush & Hamond, 1990). Thus, it was imperative that the training
educated interviewers about suggestibility (what it is, prevalence, famous studies, factors
that increase it) and how to minimize suggestibility in the context of the forensic
interview.

Module 3. Understanding Disclosures, False Allegations, Denials and
Recantations. This module focused on bringing objectivity into the forensic interview
and understanding that there are alternative possibilities in regards to abuse status.
Learning objectives included understanding the process of disclosure of child sexual
abuse, exploring plausible alternatives to the hypothesis that the child was abused, and
correctly reported, understanding false allegations, false denials, and recantations and
exploring confirmation bias in forensic interviewing. Child sexual abuse investigations
seek to determine whether the abuse occurred or not. Unfortunately, whether abuse did in
fact occur is not always a straightforward answer.

Research indicates that only about 4% of all child sexual abuse investigations
produce medical evidence such as genital anomalies, bruising and cuts evidencing that
the abuse occurred (Heger et al., 2002). The limited medical evidence is due to a. delays
in reporting (Watkeys et al., 2008); b. the fact that acts of sexual abuse at times do not
involve penetration (Fraser & Makoroff, 2006, Heger et al., 2002); and c. the ability of children’s bodies to heal after trauma to the genitals (Berenson et al., 2000, Heger et al., 2002). In fact, delays are not uncommon and disclosure may not occur for years, in some cases disclosure taking place only in adulthood; nondisclosure rates are common as well, with rates ranging between 46 and 69% (Alaggia, 2004, Hershkowitz, Lanes, & Lamb, 2007, London, Bruck, Ceci, & Shuman, 2005, Smith, Letourneau, Saunders, Kilpatrick, Resnik, & Best, 2000).

Other plausible occurrences are false allegations (falsely reporting that the alleged abuse took place), false denials (denying the abuse took place), recantations (taking back a previous statement that the abuse occurred) and inconsistencies (making contradictory statements across statements). The exact base rates for these are unknown due to mixed findings from studies with mixed samples, methodologies, and other factors, although research reveals that rates of false allegations range from 1% to 56%, rates of false denials range from 1% to 72%, and rates of recantation range from 4% to 23.8% (for a review, see O’Donohue & Cirlugea, 2016).

Interviewers must be aware that the statements made by the child during the forensic interview can fall in one of several categories depending on whether the child made allegations of abuse and whether these were true, and solely searching for evidence that the child was abused may lead to a wrong conclusion regarding whether the child was in fact abused. This indicates that there are alternative explanations to be explored by the interviewer regarding abuse status, and that information from collateral sources is imperative in the analysis of the child’s allegations. Overcoming confirmation bias was at the core of this module, and various ways in which this may be done were
explored, for example by going into the interview “blind” (Cantlon, et al., 1996, Rivard et al., 2015), by being aware that false allegations, denials and recantations can and do occur (for a review see O’Donohue & Cirlugea, 2016), by exploring inconsistent statements such as when a child has provided a different narrative to his or her mother, counselor, and forensic interviewer (O’Donohue, Benuto & Cirlugea, 2013), and by taking a hypothesis-testing approach (Bruck & Ceci, 2002, Pangborn, 2009, Rohrabaugh et al., 2016).

Module 4. Generating and Testing Alternative Hypotheses in the Forensic Interview. This module built on to the principle introduced in Module 3 that interviewers must be aware of and actively work to overcome confirmation bias during a forensic interview because they are unaware of their own bias (e.g., Bruck & Ceci, 2002, Pangborn, 2009, Rohrabaugh et al., 2016). Interviewers were provided with a list of hypotheses they may test over the course of the interview in order to avoid structuring the interview in a way that only attends to evidence supporting the interviewer’s limited set of hypotheses. Unfortunately, interviewers do generally evaluate only a restricted number of hypotheses, specifically that the child was abused and the abuser was whom the child/family members/police named as the perpetrator. However, it is in the interest of everyone (including the child, the law, protective services, etc.) to understand and evaluate major opposing plausible alternatives in order to most accurately elicit information in a way that does not lead to false conclusions and, even worse, false convictions (Rabinowitz, 2003). The goal is for interviewers to become aware that there are factors within, as well as outside of, the interview that may have been responsible for the statements provided by the child, and to systematically rule out those alternative
hypotheses so that more sound conclusions about whether abuse did or did not occur can be made. Below are a set of reasonable hypotheses that interviewers ought to attend to when considering the child’s statements, adapted from O’Donohue, Benuto, & Cirlugea (2013):

Outcry. The circumstances in which the child first made his or her allegations should be explored. Although research on initial disclosure of child sexual abuse has only investigated whether this was purposeful or accidental and whether it was made to a parent or another individual (e.g., Finkelhor, Williams, & Burns, 1988, Kellogg & Huston, 1995, Mian, Wehrspann, Klajner-Diamond, LeBaron, & Winder, 1986, Priebe & Svedin, 2008, Shackel, 2009), there are many other details about a child’s outcry (for example, if it only occurred when the child was upset with a family member or in the context of a fight) that should be analyzed and ruled in or out.

Stake. Sometimes child sexual abuse allegations emerge in contexts that reveal that someone close to the child had a stake (or agenda) in the allegations being made. For example, research has shown that children are more likely to make false allegations in the context of a custody battle (e.g., Green, 1986, Benedek & Schetky, 1985). Thus, it is important for interviewers to explore whether anyone close to the child had something to gain out of a guilty or not guilty verdict above and beyond the child’s safety. Other examples of possible stake include a child seeking emancipation from his or her parents, a child running away from home, revenge after a breakup, and deflecting blame from inappropriate behavior by the child (e.g., touching another child’s genitals at school, getting caught watching pornography, etc.). Of note, potential stake does not automatically indicate that an allegation is false, but rather that the larger context must be
explored.

*Parental and Other Caregiver Suggestion.* Parents and other caregivers may question the child regarding allegations, whether before the child has even made any allegations (e.g., if the parent has heard from someone else that the child may have been abused) or after. These conversations are at times quite leading and ought to be explored by the interviewer in order to determine whether the questioning was in fact suggestive and whether the child may have developed a false memory about the alleged abuse. Research indicates that false information suggested by parents to their children can be incorporated into the child’s memory and subsequently reported as a false allegation (Poole & Lindsay, 1995, 2001, 2002).

*Outside Contamination.* Related to parental/caregiver suggestion is outside contamination, and this refers to any other interactions (other than caregiver) the child may have had regarding the allegations. This could be with a friend, police officer, therapist, doctor, and other family members. Any one of these interactions could have contained suggestive questioning and it is important to ask the child to whom he or she talked about the alleged abuse. Upon exploration the interviewer may find out that these conversations were perfectly harmless, or contained suggestive techniques. Nevertheless, these interactions should be explored and not just assumed to have been innocuous.

*Forensic Interview Problems.* A set of hypotheses to be ruled out focuses on the interviewing techniques utilized by forensic interviewers. Not all techniques are the same, and research has shown that practicing biasing techniques increases the likelihood that the child will produce a false memory. Additionally, Ceci and colleagues (1990) found that children are more likely to remember information incorrectly when biasing
information was incorporated into the interviewer’s questions and further, that they were more likely to remember this information correctly when the source of the information was an adult rather than a child. Eighteen biasing interviewing factors to be ruled out are explicated in Fanetti, O’Donohue, and Bradley’s (2006) Protocol for the Forensic Evaluation of Children and are summarized in the “Setting the stage for the interview” and “Avoiding interviewing mistakes” modules. Interviews and the subsequent conclusions regarding status of abuse, perpetrator, and other relevant factors are much stronger if rival hypotheses (for example, that the child was threatened or bribed, or that the interviewer used leading questions), can be ruled out. Biased interviewing techniques are problematic with children of all ages, although more so with younger ones (e.g., Ceci & Bruck, 1993, Fivush, 1993, Goodman, Rudy, Bottoms, & Aman, 1990, McAuliff, Kovera, & Viswesvaran, 1998). Additionally, it is likely that the child has already undergone at least one interview with law enforcement prior to his or her forensic interview.

Child’s Memory of the Events. Children (and adults) may make memory errors when discussing allegations because this disclosure involves a past event that the child must recall. Whether memory errors (of omission or commission) have occurred must be explored by interviewers as these may affect the accuracy of the child’s statements, with special attention paid to others’ previous conversations about the allegations with the child. Research has revealed that children are more likely to make memory errors when presented with false or misleading information (see Ceci & Bruck, 1995, for a review). However, even adults are susceptible developing false memories after being presented with misleading information, as demonstrated in the Loftus and Pickrell (1995) “Lost in
the Mall” studies. Loftus and Pickrell (1995) recruited 24 adult participants who were presented with four stories from when they were between 4 and 6 years old, three of which were true, and one false. Each participant was first sent a written description of four events that their relatives had outlined – three real and one fake. They were then asked to write down which events they remembered and more details of the events that they remembered. Then participants were interviewed and reminded about the four memories and asked to recall as much as they could about them. At a second interview a week later, a similar procedure was followed. At the end of both interviews participants rated the clarity of their memories. It was then revealed to them that one of the memories was false and they were asked to guess which one it was. Five participants falsely recalled the made up ‘lost in the mall’ event as a real memory, although participants understandably found the implanted memory much less clear. Other factors that may impact memory (e.g., drugs and alcohol) must also be explored.

Sufficiency of Details Provided by the Child. Interviewers can analyze the narrative provided by the child regarding the allegation for coherence, temporal order, amount, language used, etc. Research has shown that details about non-experienced events consisted of more spontaneous details, elaborations, and fantastical details, than for experienced events (e.g., Bruck, Ceci, and Hembrooke, 2002, Powell, Jones, & Campbell, 2003). It is also to be expected that younger children’s narratives (i.e., those of preschool age) would be less detailed than those of older children, and would differ in the language used (for a review see Ceci & Bruck, 1995).

Inconsistent Core Details. When children make inconsistent statements across accounts, and sometimes within an account, interviewers must explore why the
inconsistent core details were provided as those indicate that there are some false statements being made by the child. If the interviewer can rule out inconsistent details, or explore these with the child in a non-leading way and resolve them, conclusions about whether the abuse did or did not occur will be much more solid. Additionally, research indicates that children reporting true events are more likely to repeated the same details across interviews than those reporting false events, and narratives about false events tended to become longer and incorporate more exaggerated, aggressive, and fantastical details (e.g., Bruck et al., 1995, Bruck & Ceci, 1997).

Logistical Implausibilities: Logistical implausibilities refer to details about the allegation that may not have happen because they appear to be quite improbable given the specific circumstances. For example, claims that the child was anally raped and this tickled, or that the child was sexually abused while on a parent’s lap with other family members in the room, none of whom witnessed anything, would make the reports logistically problematic. In the case of improbable statements about sexual acts, interviewers should explore other hypotheses that may better account for the child’s statement (e.g., child read or watched something on TV, someone coached the child into making allegations, etc.).

Fantastical Details. Whether the child’s narrative is void of fantastical details be examined. Although not a particularly common occurrence (Ceci and Bruck, 2006), fantastical details (e.g., disclosure of anal penetration with sharp object such as a knife and lack of evidence of any cuts or wounds from the medical examination) signal to the interviewer that at least that specific portion of the child’s statement was made up. These types of details first received attention during the daycare trials when children made
bizarre claims including that they saw witches flying around and that satanic rituals were being performed, and subsequent research has shown that narrative about fabricated events are more likely to contain such details than those about true events (Bruck et al., 2002; Powell, Jones, & Campbell, 2003).

Personological Factors. Children’s histories may influence their ability to provide truthful narratives, and this includes both mental health problems, histories of telling lies (e.g., prior allegations of sexual abuse that the child later admitted to having made up), or developmental disabilities that may have made them more suggestible. Ruling these out, potentially by gathering information about the child from collateral contacts, will strengthen the conclusions made about the accuracy of the child’s statements.

Overall, the training emphasized a hypothesis-testing approach to forensic interviewing in order to highlight the existence of many plausible alternative hypotheses in child sexual abuse allegations, and in order to reduce confirmation bias, or the tendency to only attend to evidence supporting one hypothesis, generally that the child was abused. Systematically ruling these in or out strengthen the conclusions that interviewers can make about whether sexual abuse has in fact occurred. In addition to providing and explain alternative hypotheses, potential prompts for assessing each hypothesis were provided.

**Module 5. Cultural Competence.** This module sought to define culture, explore its implications for a child’s memory of events, discuss how social expectations may influence a child’s report, discuss how gender may influence the child’s report, address potential language barriers, and provide recommendations for when the interviewer lacks sufficient knowledge and experience to work with a child from a particular cultural
background. Cultural competence and tailoring interventions (or, in this case, trainings) to be culturally appropriate is a key issue stressed by the APA (2003) due to a rising population that is increasingly multicultural.

Conducting forensic interviews with children of various backgrounds highlights a number of issues including potential language barriers (Benuto & Garrick, 2016, Fontes & Tishelman, 2016), problems interfering with a child’s willingness to disclose abuse (e.g., fears of deportation in the case of a child whose parents are undocumented; Fontes & Plummer, 2010), different attitudes towards authorities (Fontes & Plummer, 2010), etc. Having to talk about sexual abuse is a difficult task for most children, with some children of certain cultures being even less likely to want to disclose or discuss abuse to an interviewer because such occurrences are not to be discussed with authorities, but rather be kept “in the family” (Fontes & Plummer, 2010). Therefore, it was important for this training to include a component on cultural competence that discussed issues that may arise when working with children from different cultures, and that provided practical guidelines how to work with these.

Module 6. Setting the Stage for the Interview. This module focused on introducing the interviewer and interview process to the child, the room and any equipment, and establishing the ground rules that the child must follow (such as only telling the truth) during the interview (Geddie et al., 2001, Saywitz, Nathanson, & Snyder, 1993, Warren & Marsil, 2002). Guidelines for interacting with the child (e.g., using developmentally appropriate language, asking the child if he or she needs a break, reinforcing detailed narratives and talking in general) were also provided. There is little reason to believe that children, particularly young children, have any detailed understanding of a “forensic
interview,” and these beliefs may affect the child's readiness or ability to provide accurate information (Saywitz, Nathanson, & Snyder, 1993). Therefore, the interview must begin with first getting to know the child and making him or her comfortable with the interviewer, and then familiarizing him or her with the interview context, all before asking any abuse-related questions. The following are important steps to follow while setting the stage for the interview, prior to asking any abuse-related questions.

Rapport Building. A good interview begins by building rapport with the child through open-ended questions about child’s friends, family, hobbies, school, and other neutral or positive topics (Almerigogna et al, 2008, Almerigogna et al., 2007; Roberts, Lamb, & Sternberg, 2004, Ruddock, 2006, Hershkowitz, 2009). During this phase, the interviewer seeks to create a warm and supportive environment for the child in order to facilitate later disclosure. Additionally, rapport is essential to the child’s ability to resist leading questions or provide information about outside contaminating factors such as others’ threats or bribes. Because discussions of sexual abuse acts may be inherently perceived by the child as “bad” or “dirty,” the child must be made to feel comfortable with the interviewer initially by discussing neutral topics.

“I don’t know” Responses. After rapport is established with the child, he or she must be informed that he or she may answer, “I don’t know” to a question whose answer the child doesn’t know (Earhart et al., 2014, Moston, 1987, Russell, 2006, Shapiro & Purdy, 2005). Children do not always understand that “I don’t know” is a reasonable response in the forensic interview context and may feel a responsibility to provide details even when they are not sure. In forensic interviews, stating “I don’t know” rather than guessing an answer is preferred. The child’s competence in using “I don’t know”
responses may be tested asking him or her a question whose answer he or she would not
know, e.g., “What is the name of the interviewer’s dog?” or might not understand, e.g.,
“How many phalanges do you have?”

“I don’t remember” or “I don’t feel comfortable answering the question”

Responses. In addition to “I don’t know” response, children must also be informed that
they may answer, “I don’t remember” or “I don’t feel comfortable talking about that”
(Saywitz, & Moan-Hardie, 1994). Children sometimes use “I don’t know” as a catch-all
phrase when they don’t want to answer a question either because they don’t remember a
detail or they don’t feel comfortable providing an answer.

Truth Meaning. It is particularly important to determine whether the child
understands what telling the truth and telling a lie mean, especially with children of
younger ages (e.g., Bussey, 1992, Huffman, Warren, & Larson, 1999, Talwar, Lee, Bla,
& Lindsay, 2002). Ideally, this would be done prior to questioning about the target (i.e.
alleged abuse) event as children may have skewed or unusual ideas about what it means
to tell the truth.

Truth Importance. Because stating the truth may be more or less important
depending on the context and because the forensic interview is a context in which telling
the truth about what really happened is of utmost importance, it is necessary to
determine whether the child places great importance on truth telling (e.g., Bussey, 1992,
Lindsay, 2002). Other situations, for example games involving fantasy such as cops and
robbers, require a suspension of reality and thus truth-telling is becomes less important.
Additionally, certain interpersonal situations, for example when one’s loved one asks
about how a new outfit makes him or her look, may make it difficult even for adults to
determine whether the absolute truth should be told or whether a “white lie” would be
more acceptable to maintain the relationship. In regards to forensic interviewing, children
may have to disclose difficult things that may place loved ones in jail, or that may
absolve others due to previously untruthful statements made by the child. Additionally, it
is considered good practice, and more likely to increase truth telling, if after the truth-lie
discussion the child is asked if he or she promises to tell the truth.

Role of the Child and Purpose of the Interview. The role of the child in the
forensic interview as well as the purpose of the interview must be assessed as children
may have inaccurate ideas about these (Flin, Stevenson & Davies, 1989), for example
thinking that their role is to protect or convict someone, or to tell the interviewer exactly
what they told someone else. Sometimes children assume that the interviewer already
knows what transpired and thus it is useful to inform the child that the interviewer was
not present to any event involving the child and doesn’t know what happened.

Threats and Bribes. Sometimes children have experienced outside influences that
may affect their willingness to provide details or tell the truth such as receiving threats
with harm to self, to loved-ones, to pets, or to personal property from the perpetrator
(e.g., “If you tell anyone what happened I’ll kill your mom and you’ll never see here
again”) or bribes (e.g., “If you tell the police that daddy abused you I will get custody of
you and you’ll get to see me all the time”) (Jones & McGraw, 1987, Pipe, & Wilson,
1994, Slowiki, 2008). Not all pressures may be malicious and some bribes may be made
to “aid” the child in cooperation with an investigation yet it is still important to evaluate
whether any pressures were present and potentially influencing the child’s responding.
Disclosure Inhibition. Whether the child is uncomfortable or unwilling to discuss certain topics must be assessed as children might feel afraid to discuss particular topics such as parts of the body, other’s misbehavior, or their own untruthful statements and this discomfort or unwillingness might interfere with the child’s ability to disclose certain information (Siegman & Reynolds, 1983, Wood, McClure, & Birch, 1996). Asking the child if he or she is comfortable answering questions when difficult topics come up or when the child’s affect changes may inform the interviewer as to what he or she could do to make the child feel more comfortable in order to prevent the child from minimizing his or her response due to fears about the subject matter.

Authority Pleasing. Children, and especially younger ones, sometimes try to please adults who present as authority figures by avoiding disagreement and instead going with what the adult said or proposed (Cassel, Roebers, & Bjorklund, 1996, Gould, 1999, Schwarz, & Roebers, 2006). This is problematic in the forensic interview context as the child may think that he or she must tell the interviewer what the interviewer, police, doctors, etc., want or expect to hear rather than what really happened. Thus, whether the child is responding in a manner to please an authority figure rather than providing the truth must be assessed and this can be done by asking the child to correct the interviewer when a mistake was made, then practicing this (e.g., “sometimes I make mistakes. If I get confused and say something wrong, I want you to correct me. If I said you were 20 years old, what would you say?”).

Thus, our training highlighted what is necessary for setting the stage of the interview, an important first step in child sexual abuse interviewing and one that should occur before any abuse-related questions are asked. It is important that interviewers
ensure that each step is thoroughly explored (meaning that the child has demonstrated the various competencies, such as correctly responding “I don’t know” to questions whose answer he or she didn’t know, or that he or she was able to correctly define truth versus lies and identify statements as true or false) prior to moving on to the next step. Specific examples of how each of the steps might look in an actual forensic interview were given, as well as various ways in which to respond to a child who is providing incorrect responses or being non-responsive.

Module 7. Avoiding Interviewing Mistakes. After children are familiarized with the interview context, interviewers begin orienting the child to the target event and asking various questions to get more information about what happened. It is at this stage that the interviewer’s behavior may induce suggestibility and elicit answers from the child that may not be accurate. Thus, this module addressed potentially biasing techniques that interviewers should avoid using when interviewing children who may have been abused including:

Using Inappropriate Question Types. Questions range from open-ended to close-ended, and directive to free-response. Open-ended prompts that ask the child to tell the interviewer everything about a particular event have been shown to elicit higher rates of accurate statements from the child that close-ended prompts (e.g., Dent & Stephenson, 1979, Goodman et al., 1991). The problem with close-ended prompts is that they can make it seem as though only specific responses are wanted or reasonable. A particular type of closed-ended, forced choice prompts-yes/no questions-often seem to require yes/no responses, even when accurate responses do not clearly fall in either category. For example, if a child is asked, “Did your step father touch you in a bad way?” he or she
may feel that a “yes” or “no” answer is required and may feel pressured provide one even if they are unsure about whether a situation such as rubbing certain creams or lotions on certain parts of the body is acceptable. Interviewers should try to avoid using closed-ended prompts as much as possible, especially earlier in the interview, and instead rely on open-ended ones (e.g., “tell me more,” “tell me about x,” “and then what happened?”) to elicit more details from the child.

Asking Leading Questions. Leading questions are questions that an interviewer may ask in order to suggest an answer without any previous statements by the child providing information about the answer of interest. Some leading questions are quite obvious (e.g., asking the child “How did it feel when the perpetrator put his penis in your butt” or “Show me on the drawing where Jimmy hurt you?” when the child hasn’t made any statements about the perpetrator engaging in penetration or hurting the child), while others are more subtle (e.g., “Do you think it was bad when your dad put medicine on your private area?”). Both kinds should be avoided by interviewers as they may cause the child to answer the question in a specific way and have been show to elicit higher rates of inaccurate information (e.g., Bruck & Ceci, 1999, Cassel, Roebers, & Bjorklund, 1996, Ceci, Ross & Toglia, 1987, Garven, Wood, Malpass & Shaw, 1998, Roberts, Lamb, & Steinberg, 1999, Schaaf, Alexander & Goodman 2008).

Asking Repetitive Questions. Interviewers should also avoid asking a child a question repeatedly as these too have been shown to have higher rates of eliciting inaccurate information (e.g., Bruck, Ceci, Francoeur & Barr, 1995, Cassel, Roebers, & Bjorklund, 1996, Gilstrap, 2004, Memon & Vartoukian, 1996, Poole & White, 1991, 1993, Quas, Malloy, Melinder, Goodman, D’Mello & Schaaf, 2007). Specifically, a child
is asked a question multiples times when he or she has provided an incorrect answer the first time (e.g., when asked at school, “What is 2+2?”) Thus, the child has learned that a question may have been repeated because the initial answer was incorrect, and the child should change the answer. This also holds for when the child is non-responsive and has not provided an answer. The child may not know the answer, or may not feel comfortable providing it, yet will feel pressured to say something because the interviewer has repeated the question. In addition to attempting to avoid repeated questions, it is beneficial to inform the child that repetitions of a question will occur only when the interviewer has forgotten what the child said or didn’t understand it, and not because the interviewer is expecting a different response.

Disconfirming the Child’s Responses. Children sometimes respond by changing their answers when they are told that a previous answer was incorrect (e.g., Clarke-Stewart, Thompson, & Lepore, 1989, Hafstad, Memon & Logie, 2004). If the child accepts the assertion that he or she has actually made a mistake, he or she may re-evaluate their recall and make alterations to match the authority’s assertion. Thus, if the interviewer responds negatively to the child’s utterance (e.g., when the child is asked what his or her father did to him or her and the child responds, “Nothing” or “I forgot” and the interviewer counters, “No, you didn’t forget. You know exactly what happened”), the child’s responses may be contaminated because now the child is providing statements that support the adult’s version of the events. Interviewers sometimes also use conformity press to disconfirm the child’s answers, for example by reminding the child that he or she told her mother something else other than what the child has told the interviewer.
Differentially Reinforcing the Child's Responses. Basic principles of behaviorism (Skinner, 1957) indicate that behavior that is followed by a reinforcer is more likely to become more common in the future, whereas behavior that is followed by a punisher is more likely to decrease in the future. The interviewer should consider how to respond to specific types of responses that a child may provide, and should avoid reinforcing (e.g., paying particular attention to details that support the guilt of the perpetrator) or punishing the child’s responses (e.g., looking disinterested in details provided by the child that may exculpate the perpetrator) the child’s statements as these may be shaped by the reinforcement contingencies and result in the child providing only exculpatory information, and vice-versa (Billings et. al., 2007, Garven, Wood, & Malpass, 2000). Thus, the interviewer’s positive and negative reactions may shape not only the information the child provides, but also the way the child recollects additional information. The interviewer should aim to provide neutral responses to different kinds of information while reinforcing talking and participating in general.

Encouraging Speculation. Because the goal of the forensic interview is to generate as much information about reliable memory of experienced events as possible, asking the child to “guess” stands in opposition to that goal. Interviewers should avoid encouraging the child to speculate at all cost as this indicates to the child that guessing is acceptable within the context of the interview and may elicit inaccurate information when the child feels pressure to provide a response, possibly by guessing, when the child doesn’t have an answer to the interviewer’s question (e.g., asking a child to “guess” how many times the perpetrator touched him or her when the child states that he or she “doesn’t know” how many times the perpetrator touched him or her) (Schreiber, Wentura
& Bilsky, 2001, Schreiber & Parker, 2003). Such questions are problematic not only because they elicit inaccurate information, but also because they may cause the child to subsequently incorporate the “guessed” information into their narrative. Thus, speculation should be actively discouraged by the interviewer.

Conformity Press. Because people, including children, generally try to be consistent with each other or their own previous statements, even when the accuracy of those people or statements is doubtable, interviewers should avoid making the children aware of the reports of others (e.g., “Tommy said that you told him that your daddy touched you, tell me about that”) or reminding them of their own reports (e.g., “Last time I saw you, you said X, Y, and Z”). This is because the goal of the interview is to gather information about independently remembered recall rather than about previous/ others’ statements. Research has shown that using conformity press is suggestive and can lead to the development of false memories (Garven, Wood & Malpass, 2000, Principe & Ceci, 2002, Pynoos, & Nader, 1989, Small, 1896, Wood et al., 1997).

The training familiarized the learner with common interviewing mistakes that could potentially introduce suggestibility to the child and how to avoid these. The fewer of interviewing mistakes that are used, the stronger the interview will be. Practical guidelines for minimizing suggestibility in the interview were also provided.

Module 8. Closing the Interview and Integrating the Information Generated from the Forensic Interview. The last module focused on terminating a forensic interview and integrating drawing conclusions based on the information that was generated during the interview. This is an important last step as the interview has likely elicited many details from the child that need to be analyzed and compiled into a
A cohesive report for others to use. Child sexual abuse investigations are a multidisciplinary process and in a team of individuals from various departments, including detectives, nurses, doctors, and social workers, everyone works together to investigate cases of potential sexual abuse. The child’s statement during the forensic interview is only one piece of information or evidence and other evidence will come from the medical examination, if one was conducted, from police interviews with possible witnesses, and so on.

The child must first be asked if there is anything else he or she remembers that he or she has not mentioned already, if there is anything else that the interviewer asked about that the child would like to address, and if he or she has any questions for the interviewer. Children sometime want to know what will happen to the alleged abuser, and it is important that the interviewer does not make any promises he or she cannot keep such as “We will make sure this never happens to you again”. Other times children ask benign questions, such as wanting to find out more about a profession in law enforcement. Potential future reporting of abuse must also be addressed and this may be accomplished using previously motioned information from the child if the child disclosed abuse, or conducting a safety discussion even if the child has not reported any abuse during the interview.

In order to integrate the information, all relevant hypotheses regarding abuse must first be enumerated including who perpetrated the abuse, how many times the alleged abuse occurred, where it occurred, when it occurred, what the alleged acts were perpetrated, and other relevant details. Next, all potentially supportive and unsupportive information must be listed including interview problems that were or were not present,
and alternative hypotheses that were or were not explored. A guide was provided to assist with organizing interview information.

**Format of the Modules**

Modules for each forensic interviewing principles followed a standard format of a PowerPoint presentation with voiceover in which learning objectives were first introduced, then the principle was discussed and relevant research and implications were explored. Each module concluded with practical guidelines for that principle. Other elements within the modules were varied based on the content of each module. For example, the module on suggestibility included portions of a forensic interview transcript from one of the day care cases in the 1990s, a brief review of the literature, dialogue utilized in a famous suggestibility study, specific questions to ask to explore suggestive interactions, and DO’s and DON’Ts for avoiding suggestibility in a forensic interview.

All modules used evidence-based teaching. Of note, computer-based teaching has been shown to be just as effective in promoting learning as face-to-face strategies (e.g., Davis et al., 2008). Tools proven to enhance learning included graphics accompanied by verbal explanations that were used to describe the visuals (e.g., Ginns, 2005, Moreno & Mayer, 2007) and setting clear learning objectives (Lipsey & Wilson 1993). Additionally, personalized training such as the use of first and second person language (Mayer, 2009) was used, for example, “We hope that this training increases your knowledge of interviewing principles in order to conduct better interviews and to better help children, their families and the justice system as a whole.”

**Hypotheses**
Literature review yielded limited data on the content as well as acceptability, feasibility, and accessibility of forensic interviewing trainings in spite of their wide use to distribute knowledge and train those interviewing children who may have been sexually abused. Thus, the purpose of the present study was to develop and evaluate an online forensic interviewing training focused on evidence-based child sexual abuse interviewing principles. Our goal was to demonstrate that the proposed training 1) was found as reasonable by content experts; 2) was successful in delivery interviewing principles knowledge; and 3) was acceptable to individuals participating in the training. Thus, the hypotheses of the study were as follows:

**Hypothesis 1**

Content experts in child sexual abuse, forensic interviewing, training, cultural competence, and legal issues will find the training to be acceptable and feasible.

**Hypothesis 2**

Participants in the training condition will demonstrate significantly more knowledge of forensic interviewing principles on a forensic interviewing knowledge measure than participants in the active control condition.

**Hypothesis 3**

Participants in the training condition will report high levels of satisfaction with the training on a consumer satisfaction measure.

**CHAPTER II. METHODOLOGICAL APPROACH**

**Participants and Recruitment**

**Content Validity.** Content validation experts for the training were selected from forensic psychology and related fields. Individuals identified as experts were contacted
by email and invited to participate in the current study. One to three experts were contacted per content area. Of those, Dr. Kristen MacLeod, M.D. was selected as the child sexual abuse expert. Dr. MacLeod is a board-certified subspecialist in child abuse pediatrics physician who has been practicing for 18 years. She is the medical director of the Child Abuse Response and Evaluations (CARES) team for Washoe County Child Advocacy Center, and Assistant Clinical Professor at the UC Davis Children's Hospital. She has conducted hundreds of child sexual abuse medical evaluations. Dr. Matthew Fanetti, Ph.D. was chosen as the forensic interviewing expert. Dr. Fanetti is a clinical psychologist who has been conducting research in the area of forensic interviewing for over 20 years. He has written over 20 articles and chapters in this area, and has edited a book in 2016 on the forensic interviewing of children. He has also evaluated hundreds of forensic interviews with children who may have been sexually abused.

Dr. David Harrison, Ph.D. was selected as the training expert. Dr. Harrison recently defended his dissertation on the evaluation of an online training at the University of Nevada, Reno. He has been working as an instructional designer creating educational and tutorial videos for the university and has written articles on models of learning and evaluations of educational materials. Dr. Lorraine Benuto, Ph.D., a Spanish speaking licensed clinical psychologist was selected as the expert on cultural competence. Dr. Benuto has conducted research in both cultural competence and forensic interviewing with children. Ms. Kresta Daly, J.D. was selected as the legal expert. Mrs. Daly is a criminal defense attorney who has defended hundreds of cases in state and federal court, a significant portion of which were involved allegations of child sexual abuse. She has
also co-authored publications on legal implications in forensic interviewing. Of note, no prosecuting attorneys responded to our invitation.

**Pilot Study.** Eighty-eight participants of varying educational and professional levels were recruited. Undergraduate students over 18 years of age enrolled in psychology and criminal justice courses at the University of Nevada, Reno, were recruited via undergraduate psychology courses and flyers placed on campus. Graduate students in clinical psychology and social work programs from across the United States were recruited via list servs and emails to personal contacts at major universities. Additionally, professionals who may conduct forensic interviews such as law enforcement, social workers, investigators and psychologists were recruited via emails to personal contacts as well as emails and phone communications with local and national professional organizations including the Washoe County Sheriff’s Office, Reno-Sparks Police Department, National Defense Investigators Office, Public and Alternate Public Defender’s Office, Judicial Colleges, Psi Chi, Association for Behavioral and Cognitive Therapies, and the Association for the Treatment of Sexual Abusers.

Due to the slow response to recruitment efforts, forty-two participants were recruited via Amazon Mechanical Turk (MTurk). MTurk is a crowdsourcing online marketplace for workers that allows individuals and business to coordinate the use of human intelligence for tasks. All participants were required to be fluent in English. Participants recruited via MTurk were paid $25 each. The remainder of participants had the opportunity to enter a drawing for one of five $100 Amazon gift cards. In addition, undergraduate students at the University of Nevada, Reno, received 4 SONA credits for their participation. Participants ranged in age from 18-24 to 65+ (mode=18 to 24), were
predominately female (n= 50, 56.8%), most had 1 to 2 years of post-high-school education, and were in a profession other than undergraduate or graduate student, social worker, psychology or law enforcement (n=42, 47.7%). Although we received limited responses from social workers and law enforcement professionals, these demographics indicate that the education level of participants is consistent with that of some professionals who interview children, such as Child Protective Services workers and young police officers.

**Study Procedures**

The current investigation consisted of both content validation and a subsequent pilot study.

**Content Validity.** Five experts were enlisted to review the script of the training on domains important to forensic interviewing (specifically, *in forensic interviewing*, child sexual abuse, training, cultural competence, and the law), demonstrating the acceptability of the training. Experts reviewed the forensic interviewing training and provided feedback with regards to a. important information missing from the training that would be necessary to include; b. inaccurate information included in the training that should be removed; and c. suggestions for improving the accuracy and quality of the training. Additionally, consultation took place with the training expert to discuss evidence-based training practices, steps for the development of an online training, and use of various training tools. Upon approval of the training script by the experts, a PowerPoint slide show was created, and the voice over PowerPoint was recorded using Audacity and iMovie. The training materials, including the training video and measures were uploaded to Qualtrics, a research software company.
Pilot Study. A pilot study is a small-scale study that is used to help design a further confirmatory study, using mainly descriptive statistics and identification of trends (Arain, Campbell, Cooper, & Lancaster, 2010). Most pilot studies do include a control group but do not include blinding. In the case of the present investigation, the pilot study was implemented to determine whether the training increased interviewing principles knowledge and was found as acceptable by trainees. No adequate control groups have been identified in the literature. The few studies that have been conducted on forensic interviewing trainings have compared interviews conducted by interviewers who were trained in a forensic interviewing protocol with interviews conducted by the same interviewers prior to them receiving training in the protocol. These conditions do not apply to the current study as we are training on principles of forensic interviewing rather than a protocol, and as we are not utilizing forensic interviews as one of our outcome measures. Additionally, there is not a treatment as usual (or training as usual) highlighted in the literature for child sexual abuse interviewer trainings. However, not using a control group would have limited the conclusions drawn regarding whether our training, and not some other factor, such as maturation and testing effects, truly caused an increase in forensic interviewing knowledge. Thus, in order to control for threats to internal validity, an active control group that received some components of a forensic interviewing training was added. Specifically, the active control condition was comprised of Dr. Lyon’s 10 Step Investigative Interview and two videos describing forensic interviewing techniques by Dr. Lyon, described in a later section.

Participants accessed the study online via a Qualtrics link where they were first provided with consent information as approved by the UNR Internal Review Board
(IRB). They were informed that the purpose of the study was to evaluate a newly-developed forensic interviewing training. Following consent to participate in the study, participants were randomly assigned to one of the two groups, training and control.

Training. The training condition consisted of watching the two-and-a-half-hour video of the newly developed training (https://youtu.be/PTag6oADDS4). Participants in the training condition first completed the Demographics and Forensic Interviewing Knowledge Questionnaires, then were given access to the training video. Due to the significant length of the video, participants were allowed to pause, forward, and reverse the video as well as exit and re-enter the survey at any time. Modules were presented in the following order:

Introduction to forensic interviewing

Module 1. Implications of child development for forensic interviewing

Module 2. Implications of suggestibility for forensic interviewing

Module 3. Understanding disclosures/ false allegations/ denials/ recantations

Module 4. Generating and testing alternative hypotheses in the forensic interview

Module 5. Cultural competence

Module 6. Setting the stage for the interview

Module 7. Avoiding interviewing mistakes

Module 8. Closing the interview and integrating the information generated from the forensic interview

Following the implementation of the training, participants in the training condition completed the Forensic Interviewing Knowledge Questionnaire again. Participants in the training conditions also completed the Training Satisfaction
Questionnaire in which they were asked to rate their satisfaction with and provide feedback on the training. Upon completion of the study some participants had the opportunity to enter their email addresses in the raffle for one of five $100 Amazon gift cards. This identifying information was stored on the secure Qualtrics website, separately from participant questionnaire responses.

Control. A control group was chosen in order to control for variables (e.g., participant or researcher expectancies, etc.) that may have interfered with our ability to determine that the training did in fact increase interviewer knowledge. Additionally, an active control group was selected as a means to evaluate whether a widely-used interviewing protocol was equally as effective in providing sufficient information about forensic interviewing, specifically, Dr. Thomas Lyon’s 10-Step Investigative Interview (Lyon, 2005). This protocol was selected as it has been the most frequently used protocol in forensic interviews evaluated by this writer (O’Donohue, Fanetti, Cirlugea & Vechiu, in progress), it overlaps with a good portion of the content of the evidence-based principles training, and training videos describing the protocol and forensic interviewing techniques were found online. Additionally, it was believed that this active control condition would most closely approximate the training condition. The 10-Step Investigative Interview (available at https://www.oumedicine.com/docs/ad-pediatrics-workfiles/8-lyon-10-step-protocol-2005-revision.pdf?sfvrsn=2) is an adaptation of the NICHD Investigative Interview protocol and includes ten instructions: don’t know instruction, don’t understand instruction, you’re wrong instruction, promise to tell the truth, practice narrative, allegation, allegation follow up, follow up with “tell me more” and “what happened next” questions and multiple incidents. Despite its wide use in
forensic interviewing and foundation in evidence-based forensic interviewing principles, Dr. Lyon’s protocol has not undergone any research evaluating it (Cirlugea & O’Donohue, 2016).

Two one-hour training videos describing this protocol and related forensic interviewing techniques were available to the public online via YouTube (https://www.youtube.com/watch?v=7my1T4Ghf7A, https://youtu.be/RQrHHRqrPG8). Dr. Lyon’s (2014) article on interviewing children (also available to the public online) was added to more closely approach the duration of the training condition and broaden the content presented in this condition. This article explores topics such as minimizing suggestibility, maximizing productivity, nondisclosure of abuse and its implications for interviewing, and the problem with closed-ended questions. Materials in the control condition covered similar areas of content as our newly developed training. These include setting the stage (such as building rapport, using I don’t know instructions, etc.), discussing confirmation bias and the importance of an ignorant interviewer, biasing techniques to be avoided vs. good interviewing techniques, suggestibility and false allegations, and disclosure and nondisclosure. They did not, however, cover content directly addressing child development, hypothesis testing, cultural competence, and how to close and interview. Table 2 details the overlap between the two conditions.

Table 2.

Areas of Overlap Between the Two Conditions

<table>
<thead>
<tr>
<th>Module 1</th>
<th>Module 2</th>
<th>Module 3</th>
<th>Module 4</th>
<th>Module 5</th>
<th>Module 6</th>
<th>Module 7</th>
<th>Module 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Control</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
Participants in the control condition first completed the Demographics and Forensic Interviewing Knowledge Questionnaires. Next, they watched the two YouTube videos and read the article and the total time for these tasks approximated two-and-a-half hours. All materials were accessed via Qualtrics. Following the implementation of the training, participants in the training completed the Forensic Interviewing Knowledge Questionnaire again. Upon completion of the study participants had the opportunity to participate in the Amazon gift card raffle.

Measures

**Demographic Data.** Demographic data including the patient’s gender, age, level of education, and profession were obtained via a Demographic Questionnaire. Age as well as education were recorded as categorical variables (e.g., 18 to 24, 25 to 29, 1 to 2 years of education).

**Forensic Interviewing Knowledge Questionnaire.** A thorough review of the literature has identified no assessment instruments for evaluating interviewer knowledge and application of interviewing principles after undergoing a child sexual abuse interviewing training. Therefore, a Forensic Interviewing Knowledge Questionnaire was developed to assess forensic interviewing principle knowledge and application. This test could be used in the future in order to identify those who are ready to move on to a training in a forensic interviewing protocol. Question format included multiple-choice questions in which either one or more options were correct, and true-false.

A pool of items relevant to the content areas (e.g., suggestibility, child development, biasing techniques, alternative hypotheses, etc.) was created, with the goal
of ten to fifteen questions per content area. Ninety-nine total items were selected. The test was administered to five graduate and undergraduate students in order to ensure that questions were worded properly, were understood by the test-taker, and were not too easy. Students provided feedback on the question wording and modifications were made appropriately. Of the ninety-nine items, thirty-one were dropped and wording was changed for another ten. Additionally, the format of some questions was changed from multiple choice to “check all that apply” in order to increase their difficulty as most students correctly answered over 60% of the questions on the test. The remaining sixty-eight items underwent content validation by Dr. Fanetti, expert in forensic interviewing, who determined that the questions adequately explored each content area. Below are sample questions (see Appendix 1 for the complete measure):

What should the interviewer do if he/she suspects that there are personological details present? (Check all that apply)

a. Consult with a professional
b. Diagnose the child with the appropriate mental disorder
c. Talk to the child’s parents
d. Nothing because personological details do not affect child sexual abuse allegations, only suggestibility does

True or False

Closed-ended prompts are to be avoided at all costs.

Please read the following forensic interviewing transcript summary (names and some details have been changed) and answer the questions:
Sally reported that the gentleman smacked her butt. The interviewer asked, “Do you have any idea why he would have done that?” Sally responded, “He was a pervert”. The interviewer then asked, “So why do you think that he would have done that?” Sally replied, “I don’t know”. The interviewer then asked, “When you say, ‘pervert’, what do you think his reasoning was behind doing that?”

The interviewer used which biased interviewing technique(s)? (check all that apply)

a. Encouraging speculation
b. Repetitive questioning
c. Disconfirming the response
d. Inappropriate reinforcement
e. Conformity press

The test was administered to a criminal justice undergraduate class to determine whether it was too easy and thus a ceiling effect would occur when administered to participants. This would have indicated that there was little variance in the scores and thus no room for improvement following the training. A total of 25 students took the test and scored an average of 24.9 (36.5%). This score was revealed that the test was quite difficult and it was unlikely that a ceiling effect would have occurred.

**Training Satisfaction Questionnaire.** A search of the literature revealed no consumer satisfaction measures developed specifically for use in forensic interviewing trainings. Thus, a Training Satisfaction Questionnaire was developed. This included items rated on a 7-point Likert scale (e.g., “The training was enjoyable,” “I now
understand basic principles of forensic interviewing,” and “How satisfied were you with the training”) as well as fill-in-the-blank questions (e.g., “What did you like about the training?” “What did you dislike about the training” and “What could we do to improve the training?”).

**Data Plan**

**Power analysis.** Power analysis was conducted using the G Power, v 3.1.2, a statistical power analysis computer program (Faul, Erdfelder, Lang, & Buchner, 2010). The sample size of 84 participants was estimated for this pretest-posttest design with between-subject comparison. This analysis was based on an alpha level of 0.05, a high achieved power (β=.95), and a large effect size.

**Data analysis.** Chi-square analyses were conducted to determine if the training and control conditions varied significantly on demographic variables including age, gender, profession and years of post-high-school education. Two Independent T tests were used to evaluate pre and post assessment data for the Forensic Interviewing Knowledge Questionnaire for the two groups, control and training, in order to determine whether forensic interviewing knowledge increased more at post-assessment for participants in the training condition. A paired samples T-test was used to evaluate whether there were any differences in mean scores between pre and posttests for the training group. A second paired samples T-test evaluated any differences in mean scores at pre and posttest for the control group. The T test statistic is used to determine whether a treatment (or, in this case, training) caused a change in the population mean (Gravetter, 2008). Descriptive analyses were used to evaluate the results of the Demographic and Consumer Satisfaction Questionnaires.
CHAPTER III. RESULTS

Hypothesis Testing

Content Validity

Hypothesis 1. Content experts in child sexual abuse, forensic interviewing, training, cultural competence, and the law will find the training to be acceptable and feasible.

Dr. Fanetti, forensic interviewing expert, concluded that the training was acceptable and feasible. He agreed that important points were covered in the training, and asked that the section on interviewer preconceived notions (termed confirmation bias) be expanded. He accurately noted that interviewers who think certain things view certain answers problematically, and interviewers who are uninformed are less likely to do so. He pointed out that many interviewers have entire police version of events nearly memorized before they even start, and as a result they are more likely to behave in ways that confirm their preconceived notions and interpret children’s statements in certain ways.

Dr. Fanetti also cautioned against the use of too-informal language (such as “a whole lot” and “nowadays”) or problematically vague descriptive clauses (e.g., “fairly immature” to describe young children). He recommended that shorter sentences with good cadence and easy-to-follow tonality be used, and that redundant phrases be eliminated. He highlighted the difference between a child’s verbal acceptance of suggestion and forming a false memory, and noted that not all children who accept a suggestion in their verbal report will also form a false memory, and this should be clarified in the training. Additionally, he pointed out that children are more likely to
accept a suggestion, knowing they do not know, because it comes from an authority figure, and that most would not consider this lying depending on the developmental level of the child. He recommended that this information be included in the discussion on suggestibility. Dr. Fanetti’s recommendations were all incorporated into a revised draft of the training.

Dr. MacLeod, child sexual abuse expert, provided thorough feedback on the training. Overall, she determined that the training was acceptable and feasible, and stated that the content became stronger as the training progressed. Feedback included both edits to grammar and syntax and specific comments regarding the content. Dr. MacLeod asked that some terms be clarified (e.g., instead of referring to close-ended questions as “those types of questions,” to use “who, what, where and when” questions). She also recommended that the section on developmental disabilities include information about accommodations needed for children with various disabilities (e.g., child with trouble with auditory processing but normal IQ score vs. child with intellectual disability with low IQ score). She highlighted that these are important reasons to involve family, school and pediatricians in the investigation and to have a team approach.

Dr. MacLeod identified several questions we had suggested that interviewers use that may be problematic and may in fact introduce suggestibility and suggested changes for these (e.g., the question “Tell me to who else you talked about what happened” might imply that the child talked to someone else even if he or she did not; instead, whether the child talked to anyone else could be explored.) Dr. MacLeod also made recommendations to balance the overall point of view of the training, (for example, suggested that the term “disclosure” be used instead of “allegation,”). She stated that in regards to possible
suggestive interactions with others, whether punishment was delivered for disclosing that the abuse did occur should be added to the list. The training previously listed only punishment for denying that abuse occurred. She noted that she sees this frequently in her clinical practice, and that the literature indicates that it is a major risk factor for false denial and recantation. Dr. MacLeod’s recommendations were also all incorporated into a revised draft of the training.

Dr. Harrison, training expert, determined that the training was acceptable. He made suggestions regarding steps for the development of the training, various software programs (e.g., Audacity, iMovie, Camtasia), and training videos to assist with the development of the training. He strongly encouraged that the training be as short as possible (preferably around 30 minutes) in order to maintain users’ attention. He made other recommendations for creating engaging videos including that user-controls (pause, rewind, re-watch) help users create video length that best suits them, which should help maintain effective attention, and noted that it is unclear whether an image of the presenter is necessary for sustaining attention. He pointed out that users tend to only watch the first half of a video, and this should be taken into consideration when structuring content. All recommendations were incorporated with the exception of the length of the training. Given the breadth and depth of the training, the length could not be reduced to 30 minutes, with the final draft spanning 2.5 hours. However, forensic interviewing trainings generally last hours to several days (e.g., Cornerhouse, 2017, NCAC, 2017) and thus a 2.5 hour training was not out of the ordinary in the field.

Dr. Benuto, cultural competence expert, concluded that the training was acceptable and feasible. She noted that there is little research on cultural considerations in
forensic interviewing. She recommended that the Benuto and Garrick (2016) chapter exploring cultural considerations in forensic interviewing of children be reviewed for additional information. The chapter made recommendations regarding rapport as a critical element of the interview, interviewing the child in the language in which he or she is most proficient, using translated versions of interviewing protocols whenever possible, using a translator trained in forensic interviewing, avoiding using family or friends as translators, and awareness of cultural factors that may be important for forensic interviewing. Dr. Benuto’s suggestions were all followed.

Mrs. Daly, legal expert determined that the training was acceptable and fair to both sides of the legal system. She did not identify any information that should be removed or added from the training. She did question whether the tone was too “simplistic” and whether this may lead to lowered perceived credibility of the speaker as an authority on this subject. She recommended that use of academic language be increased in the training. Mrs. Daly’s recommendations were followed in their entirety.

**Pilot Test**

**Group characteristics (clinical versus control).** To evaluate whether the training group differed from the active control group with respect to demographic characteristics, a series of chi-square analyses were performed using a p value of .05. Participants in the training group did differ significantly with regards to occupation, ($\chi^2 = 6.32 \ df = 2, \ p < .05, \ Cramer’s \ V = .268, \ medium \ effect \ size$). Specifically, there were significantly more graduate students in the experimental group than in the control group. The two groups did not differ significantly in terms of age ($\chi^2 = 2.57 \ df = 3, \ p = .46$),
gender ($\chi^2 = .97$ df = 1, p = .33) or years of post-high school education ($\chi^2 = .63$ df = 2, p = .73).

**Hypothesis 2.** Participants in the training condition will demonstrate significantly more knowledge of forensic interviewing principles on a forensic interviewing knowledge measure than participants in the active control condition.

**Independent Samples T-Tests**

Independent samples T-Tests were conducted to evaluate pre and post assessment data for the Forensic Interviewing Knowledge Questionnaire for the two conditions, training and control. There was not a significant difference in pre-test scores for the training (M=26.55, SD=7.47, range 12 to 45) and control (M=26.21, SD=7.97, range 14 to 40) conditions, t (86)=-.21, p = .84, equal variances assumed. There was a significant difference in post-test scores for the training (M=33.98, SD=11.86, range 12 to 51) and control (M=27.83, SD=7.54, range 10 to 40) conditions, t (86)=-2.83, p < .01, equal variances not assumed. Cohen’s effect size value (d = -.63) is indicative of a medium effect size. Scores were out of a total of 68 points. Results are presented in table 3. These results indicate that forensic interviewing knowledge increased significantly more for participants who completed our newly-developed training than for those in the active control condition.

Table 3.

Results of Independent-Samples T-Tests and Descriptive Statistics for Forensic Interviewing Knowledge Questionnaire Scores at Pre and Post Assessment

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Control</th>
<th>95% CI for Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Paired Samples T-Tests

Training Condition. A paired-samples t-test was conducted to compare Forensic Interviewing Knowledge Questionnaire test scores before and after implementation of the newly-developed online training. There was a significant increase in scores on the Forensic Interviewing Knowledge Questionnaire after the training ($M=33.98$, $SD=11.86$) than before the training ($M=26.55$, $SD=7.47$); $t(39)= -6.02$, $p = .000$, for participants in the training condition. Cohen’s effect size value ($d = -1.12$) is indicative of a large effect size. Results are presented in table 3. These results suggest that participants had increased knowledge of forensic interviewing principles after undergoing our newly-developed training in evidence-based principles of forensic interviewing.

Control Condition. A paired-samples t-test was conducted to compare Forensic Interviewing Knowledge Questionnaire test scores before and after implementation of the active control. There was a significant increase in scores on the Forensic Interviewing Knowledge Questionnaire after the training ($M=27.83$, $SD=7.54$) than before the training ($M=26.21$, $SD=7.79$); $t(47)= -2.33$, $p < .05$, for participants in the active control condition. Cohen’s effect size value ($d = -0.33$) is indicative of a small effect size. Results are presented in table 4. These results suggest that participants had increased knowledge of forensic interviewing principles after being in the active control condition.

Table 4.
Results of Paired-Samples T-Tests and Descriptive Statistics for Forensic Interviewing Knowledge Questionnaire Scores for the Training and Control Conditions

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
<th>95% CI for Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Training</td>
<td>26.55</td>
<td>7.47</td>
<td>33.98</td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>26.21</td>
<td>7.97</td>
<td>27.83</td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .001
** p < .05

Undergraduate vs. Graduate Students

An independent samples T-test was conducted to evaluate pre and post assessment data for the Forensic Interviewing Knowledge Questionnaire for Undergraduate students. There was not a significant difference in pretest scores for Undergraduates in the control and experimental conditions (M=.285, SD=2.77), t (28)=1.03, p = .92 nor in posttest scores for Undergraduates in the two conditions (M=3.26, SD=3.47), t (28)=.94, p = .36. Another independent samples T-test was conducted to evaluate pre and post assessment data for the Forensic Interviewing Knowledge Questionnaire for Graduate students. There was not a significant difference in pre test scores for Graduate students in the control and training conditions (M=-2.97, SD=7.07), t (11)=-.41, p = .69 nor in posttest scores for Graduate students in the two conditions (M=5.53, SD=8.93), t (11)=.62, p = .55. Of note, these groups did not have sufficient members and thus analyses were significantly underpowered. Results are presented in table 5. These results indicate that there were no differences in scores between Undergraduate students in the two groups at either pre or posttest; in addition,
there were no differences in scores between Graduate students in the two groups at posttest.

Table 5.

Results of Independent-Samples T-Tests and Descriptive Statistics for Forensic Interviewing Knowledge Questionnaire Scores for Undergraduate and Graduate Students

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergrad Pre</td>
<td>.29</td>
<td>2.77</td>
<td>29</td>
<td>1.03</td>
<td>28</td>
</tr>
<tr>
<td>Undergrad Post</td>
<td>3.26</td>
<td>3.47</td>
<td>29</td>
<td>.94</td>
<td>28</td>
</tr>
<tr>
<td>Grad Pre</td>
<td>-2.97</td>
<td>7.07</td>
<td>12</td>
<td>-.41</td>
<td>11</td>
</tr>
<tr>
<td>Grad Post</td>
<td>5.53</td>
<td>8.93</td>
<td>12</td>
<td>.62</td>
<td>1</td>
</tr>
</tbody>
</table>

Four paired-samples t-tests were conducted to compare Forensic Interviewing Knowledge Questionnaire test scores for each group, Undergraduate and Graduate students, at pre and post testing, for both conditions, control and training. There was not a significant difference in pre-test scores for Undergraduate students in the training condition (M=4.15, SD=9.07, t (12)=1.65, p =.13), for Undergraduate students in the control condition (M=1.18, SD=5.81, t (16)=.84, p =.41), or for Graduate students in the control condition (M=-1.0, SD=1, t (2)=-1.73, p =.23), equal variances assumed. There was, however, a significant difference for Graduate students in the training condition (M=7.4, SD=7.33, t(9)=3.91, p<.01). Results are presented in table 6. These results indicate that forensic interviewing knowledge increased only for Graduate students in the training condition.

Table 6
Results of Paired-Samples T-Tests and Descriptive Statistics for Forensic Interviewing

Knowledge Questionnaire Scores for Undergraduate and Graduate Students

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergrad Pre</td>
<td>4.15</td>
<td>9.07</td>
<td>13</td>
<td>1.65</td>
<td>12</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergrad Post</td>
<td>1.18</td>
<td>5.81</td>
<td>17</td>
<td>.84</td>
<td>16</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grad Pre</td>
<td>-1.0</td>
<td>1.0</td>
<td>3</td>
<td>-1.73</td>
<td>2</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grad Post</td>
<td>7.4</td>
<td>7.33</td>
<td>10</td>
<td>3.91*</td>
<td>9</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .01

Module Analyses

Module analysis for posttest scores in the Training condition revealed that at least half of the questions in Modules 3 (Disclosures/false allegations/false denials/recantations), 4 (Hypothesis testing), and 6 (Setting the stage) were answered correctly by 50% or more of participants. Results were similar for posttest scores in the Control condition, with at least half of the questions in Modules 3, 4 and 6 answered correctly by 50% or more of participants. Table 6 summarizes these results.

Table 7

Results of Module Analyses for the Training and Control Conditions

<table>
<thead>
<tr>
<th></th>
<th>Module 1</th>
<th>Module 2</th>
<th>Module 3</th>
<th>Module 4</th>
<th>Module 5</th>
<th>Module 6</th>
<th>Module 7</th>
<th>Module 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>40%</td>
<td>33.3%</td>
<td>90%</td>
<td>50%</td>
<td>42.8%</td>
<td>70%</td>
<td>25%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Control</td>
<td>40%</td>
<td>22.2%</td>
<td>80%</td>
<td>50%</td>
<td>14.3%</td>
<td>70%</td>
<td>12.5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Hypothesis 3. Participants in the training condition will report high levels of satisfaction with the training on a consumer satisfaction measure.
Forty participants in the training condition rated the training on various dimensions of training satisfaction. The first item assessed the perceived difficulty of the training. Of forty total participants, thirty (75 %) thought the training was just right, while nine (22.5 %) thought it was too hard and 1 (2.5 %) thought it was too easy. Five items evaluating enjoyment, learning, comprehension, satisfaction and potential future recommendation of the training to others were rated on 7-point Likert scales where 1 corresponded to Strongly Disagree and 7 to Strongly Agree. In regards to how enjoyable the participants found the training, the training was rated an average of 5.03, indicating that participants did enjoy the training. In regards to whether participants believed that they learned a lot from the training, the training was rated an average of 5.83. Specific to whether participants believed that they now understood basic principles of forensic interviewing, the training was rated an average for 5.7. Results indicate that participants believed that they learned a lot and they now have a basic understanding of forensic principles. In regards to how satisfied the participants were with the training, the training was rated an average of 5.85 indicating that participants were satisfied. Specific to how likely participants were to recommend the training to a friend, the training was rated a 5.6 indicating that most participants would recommend this training. Results are presented in table 8.

Participants were also given an opportunity to provide feedback regarding what they liked about the training, what they didn’t like about the training, and what they would do to improve the quality of the training. Positive feedback included that the training was informative, comprehensive and very detailed, it increased knowledge, it was clear, easy to follow and discussed an interesting topic, and it generated reflection on
topics related to child sexual abuse interviewing. Additionally, participants reported liking the examples used to illustrate the various concepts. The most frequently provided negative feedback focused on the length of the training; specifically, participants thought that at two and a half hours, the training was too long. Additionally, some participants indicated that too much information was presented at one time. Mixed feedback was provided in regards to the design of the training slides, with some individuals enjoying this and others disliking it, in regards to the tone and cadence of the presenter, as some individuals found it soothing, respectful and sensitive and others found it to be monotone and boring, and with regards to design elements included.

Suggestions for making the training more entertaining and enjoyable included shortening the training, breaking it up into separate videos for each module (as opposed to one large video covering all eight modules), adding more animations and visually interesting elements, and adding multiple narrators. In order to help with retention of information participants also suggested adding quizzes after each module that provide immediate feedback prior to moving on to the next module and, and exploring one forensic interview case in depth over the course of the training.

Table 8.

Results of the Training Satisfaction Questionnaire

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating on a 7-Point Scale (1=Strongly Disagree to 7=Strongly Agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoyment of the Training</td>
<td>5.03</td>
</tr>
<tr>
<td>Learning</td>
<td>5.83</td>
</tr>
<tr>
<td>Understanding of Interviewing Principles</td>
<td>5.7</td>
</tr>
<tr>
<td>Satisfaction with the Training</td>
<td>5.6</td>
</tr>
<tr>
<td>Likelihood of Recommendation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating (To Hard, Just Right, Too Easy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER IV. DISCUSSION

Problematic techniques utilized in forensic interviews with children with children who may have been sexually abuse received attention after the high-profile day care trials of the 1980s and 1990s in which day care workers were falsely accused of sexually abusing children, mutilating them, conducting Satanic rituals, etc. (reviewed in Ceci & Bruck, 1995, Garven, Wood & Malpass, 2000). Prior to this, interviewers often operated on the belief that disclosing abuse was difficult and that they must use any means necessary to obtain a disclosure from the child. Evidence that many of the techniques used elicited statements from the child while compromising the accuracy of these statements led to the creation of forensic intervening protocols that provided a prescription for how an interview should be conducted and what techniques were and were not acceptable. However, although protocols purport to be based on the literature in child sexual abuse interviewing, variations exist regarding to which extent each protocol truly is evidence-based, and overall little empirical research has been conducted on their psychometric properties (Cirlugea & O’Donohue, 2016).

The development of the protocols led to a need for the dissemination of this information to individuals who may interview children in child sexual abuse investigations, such as social workers, law enforcement, and some psychologists. Compounding the issue of poorly researched protocols is the fact that the trainings themselves have not been, with a few exceptions, subjected to any research (Cirlugea & O’Donohue, 2016). These trainings are frequently a requirement in various jurisdictions.
for an individual to be qualified to conduct forensic interviews, yet there is no evidence that they have an impact on interviewer knowledge and behavior, that they are cost effective, and that consumers are satisfied with the trainings. In fact, of hundreds of forensic interviews analyzed by this writer in the past five years, only half of interviewers attempted to build rapport with the child, half taught the child that her or she could say “I don’t know” instead of guessing responses, and one third used leading questions, which are the most problematic types of questions when interviewing children. The forensic interviewing expert enlisted for the content validation of the training also conducted this analysis (M. Fanetti, personal communication, September 18, 2016) and found similar results. Additionally, trainings cost upwards of $1000, and this does not include the cost of taking time off of work, travel and accommodations.

In order to begin to address some of the shortcomings of existing forensic interviewing trainings, the present study was proposed. The purpose of the study was to develop and test an online forensic interview training based on empirically-supported principles. Specifically, the study occurred in two stages. First, experts in child sexual abuse interviewing and related areas were enlisted to validate and provide feedback on the training in regards to the following dimensions: forensic interviewing, child sexual abuse, training, cultural competence, and the law. It was hypothesized that content experts would find the training to be acceptable and feasible. Next, a pilot study was conducted to determine whether the training was effective at increasing knowledge and application of the evidence-based principles, and whether participants would be satisfied with the training.
Because no measures for assessing interviewer knowledge and application of concepts were found in the literature, an assessment instrument for forensic interviewing knowledge was developed. This test was content validated with the use of a forensic interviewing expert, then administered to undergraduate psychology and criminal justice and graduate psychology students to determine whether questions were worded in a way that can be understood and to assess whether the test was too easy and a ceiling effect would occur. Modifications to the test, including removal of some questions and rewording of others, were subsequently made.

The pilot study employed a 2x2 mixed design that was used to examine the effect of the newly-developed training on interviewer knowledge. It was hypothesized that participants in the training condition would demonstrate significantly more knowledge of forensic interviewing principles on a forensic interviewing knowledge measure than participants in the active control condition. Additionally, it was also hypothesized that participants in the training condition will report high levels of satisfaction with the training on a consumer satisfaction measure.

**Content Validation.** Hypothesis 1 was supported by the results. All five content experts determined that the training was acceptable and feasible. The forensic interviewing expert made important recommendations regarding expanding the discussion on confirmation bias and how preconceived notions influence interviewer behavior, regarding highlighting the difference between accepting a suggestion and developing a false memory, and regarding word usage and grammar. All feedback was incorporated into the subsequent draft of the training. The child sexual abuse expert made content suggestions specific to our section of developmental disabilities as well as
increasing the neutrality of the language used to talk about child sexual abuse (i.e., avoiding terms that may favor the perpetrators or the victims), and grammar and syntax modifications. All suggestions were incorporated into the training.

The cultural competence expert noted that there was minimal research on cultural considerations in forensic interviewing and suggested that the Benuto and Garrick (2016) chapter be reviewed for additional information. This chapter was reviewed, and recommendations regarding cultural considerations were incorporated to the training. The legal expert primarily provided feedback in regards to the use of casual language. The forensic interviewing expert had provided similar feedback regarding the use of certain words that he believed were too informal. This feedback was utilized and the training was changed to reflect an increase use in academic language and decrease in informal terms.

The training expert recommended that the training be shortened significantly in order to maintain the participants’ attention as the original training was three hours long. All content that was not 100% necessary for the training was eliminated as a result. For example, sentences were “tightened up” and redundant phrases were eliminated. The overall text was made more succinct. However, the remaining content still took two and a half hours to deliver, and removing any more information was thought to be detrimental to the training. Additionally, although two and a half hours is a relatively long time for a study, it is not excessive for a forensic interviewing training that covers such a wide range of evidence-based principles in depth.

The expert’s recommendation for user-controls that would allow participants to pause, rewind, and re-watch was incorporated in the training in order to compensate for the length. Additionally, participants were allowed to exit and re-enter the study at any
time, further giving them the power to control their training experience. In regards to whether an image of the presenter is necessary for sustaining attention, the evidence is mixed with some studies indicating that having a small image of the presenter helps sustain attention (e.g., Chen & Wu, 2015), while others found the opposite (e.g., Korving, Hernández, & De Groot, 2016). Mayer (2011) posits that having the presenter shown makes no difference in terms of learning outcomes. Thus, a decision was made to not have an image of the presenter and instead use a voice over PowerPoint format.

In summary, content validation results indicated experts thought the training was well constructed and covered important principles related to child sexual abuse interviewing. Modifications and requests for changes and clarification were relatively minor. Specifically, experts provided feedback regarding not only content but also structure and syntax. None of the experts identified elements that were outright egregious and did not belong in the training.

**Pilot Study.** Hypothesis 2 stated that participants in the training condition would demonstrate significantly more knowledge of forensic interviewing principles on a forensic interviewing knowledge measure than participants in the active control condition. Hypothesis 2 was supported by the results. Although there were no significant differences in pre-test scores on the Forensic Interviewing Knowledge Questionnaire for the two groups prior to the training, participants in the training condition did score significantly higher than the active control participants after undergoing the training. Thus, interviewing knowledge and application of forensic interviewing principles increased more when participants were exposed to the content of the newly-developed training. This indicates that although participants in the active control condition were
exposed to Dr. Lyon’s 10 Step investigative Protocol as well as videos describing interviewing techniques utilized by Dr. Lyon, this information resulted in less knowledge of evidence-based interviewing principles.

When pre and post-test data were evaluated for each one of the conditions, results indicated that there were significant increases in scores on the Forensic Interviewing Knowledge Questionnaire for participants in both the training and active control conditions. However, effect sizes for the two groups did differ. Specifically, there was a large effect size for participants in the training condition and a small effect size for those in the control condition. This suggests that although both conditions were effective at increasing interviewer knowledge, the training condition was more effective at doing this.

Hypothesis 3 stated that participants in the training condition would report high levels of satisfaction with the training on a consumer satisfaction measure. Hypothesis 3 was also supported by the results. Most participants thought that the training was not too easy or not too difficult. Additionally, participants found the training to be enjoyable, noted that they learned a lot and now had a better understanding of forensic interviewing, and that they would recommend the training to a friend. Overall participants were satisfied with the training. Participants also provided very useful feedback, positive and negative, regarding the length of the training, design, specific elements, and feedback will be incorporated in future revisions of the training. It appears that participants found the training to be informative and comprehensive, although they determined that it was too long. It is conceivable that for the purposes of this study, the training may have been too long. The training, coupled with the Forensic Interviewing Knowledge Questionnaire administered at two points in time, took over three and a half hours to complete, although
all materials were available online and participants could enter and exit the survey at their convenience.

It is important to consider the demographic characteristics of the participants in evaluating the feedback, and specifically the occupation. Although we ultimately developed this training for individuals who interview children who may have been abused, such as law enforcement personnel and social workers, and we extended our recruitment efforts to reach out to law enforcement and social work organizations, we only had one member in each of those categories participate in the study. The majority of participants were undergraduate students, graduate students, and individual working in a non-mental health and non-law enforcement profession. It is possible that individuals who directly work in forensic interviewing may be more accustomed to longer trainings and may be more invested in the topic of child sexual abuse.

In summary, participants in the training condition did demonstrate significantly higher interviewing knowledge than the control group as measured by our Forensic Interviewing Knowledge Questionnaire, and rated the training highly on a measure of training satisfaction.

**Undergraduate vs. Graduate Students**

Preliminary analyses indicated that the experimental group contained more graduate students than the control group. Thus, a second set of analyses were conducted to determine whether any differences existed between the two groups of students in the two conditions. These analyses indicated that there were no differences in scores between Undergraduate students in the two groups at either pre or posttest. Additionally, no differences in scores were found between Graduate students in the two groups at posttest.
Thus, undergraduate and graduate students scored similarly in each of the two conditions at pre and posttest.

An additional set of analyses was conducted comparing test scores for the two groups of students before and after the study, in each one of the two conditions, in order to determine whether one group had increased knowledge over the other. These analyses revealed a significant difference for graduate students in the training condition, suggesting that forensic interviewing knowledge increased only for this group. Thus, scores did not increase significantly for graduate students in the control group, or undergraduate students in either control or training group. It is unclear why these differences were found. One possible explanation is that there is another variable (e.g., intelligence) that may be producing differential learning effects so that graduate students, who presumably have to be at a certain level of intelligence to get into graduate school, are better able to learn this material. Another explanation could be that undergraduate students were been less interested in this training than graduate students in clinical psychology, the latter who may have found the areas covered in the training as relevant to their future profession, and as a result may have responded more carelessly to items on the test.

**Item and Module Analyses**

It is important to look at not just whether a statistically significant difference was found between conditions, but also at the scores themselves. The average score for the posttest in the Experimental condition was 33.98 (50%) out of a total possible score of 68, with a range of 12 to 51. Several potential explanations may account for the low mean score after the experimental group underwent the training, in spite of significant
difference between the two groups. First, the test itself may have been too difficult. Because initial validation of the Forensic Knowledge Questionnaire revealed that the test was too easy and thus ceiling effects were feared, many of the questions were revised and the overall difficulty of the test was increased by changing multiple choice questions to “check all that apply”. An item analysis revealed that 34 questions (50%) were missed by half or more of the participants. Of these, 23 (67.7%) were “check all that apply” questions.

When questions that were missed by half or more of participants were clustered by modules, analyses revealed that certain modules in the training performed better than others. Specifically, half or more of questions in the modules on disclosures/recantation/false allegations/denials, setting the stage, and hypotheses testing were answered correctly by participants. An explanation could be that there is variability in the modules with regard to quality, difficulty, intuitiveness, etc. Of note, these were also the modules on which participants in the control condition performed best, with equal scores on the modules on hypothesis testing and setting the stage, and a higher score in the training condition for the module on hypothesis testing. Modules performing poorly in both the training and control conditions included child development, suggestibility, cultural competence, avoiding interviewing mistakes, and closing the interview. Notably, participants in the training condition scored higher on all of the poorly performing modules than those in the control condition.

An analysis of the content between the training and control conditions suggests that these differences are not exclusively due to lack of overlap between these two as a great deal of content in the newly developed training was also found in the control
condition materials. Additionally, any content not covered by the training materials suggest that the newly developed training is more comprehensive than Dr. Lyon’s widely-used protocol. The selection of this protocol as the basis for the control condition was a well-thought decision. Given that the literature has identified no studies evaluating a forensic interviewing training on knowledge of evidence-based principles, the training could have been evaluated using no control condition or a “placebo” condition in which minimal content was covered. However, a stricter test was given by selecting Dr. Lyon’s protocol. Dr. Lyon is well-respected in his field and his teachings are widely disseminated.

Second, and consistent with participant feedback, perhaps more frequent checks of understanding are needed. Specifically, the test was administered at two time points, before and after the training. The training itself was comprehensive and covered a lot of information in depth. Short quizzes after each module with immediate feedback may serve to increase retention of information, and may result in higher post-test scores.

This also raises the issue of whether the newly developed training is sufficient to increase interviewer knowledge in a meaningful way, beyond statistical significance. While it may provide interviewers with a knowledge base of evidence-based interviewing principles, it is unclear whether this would lead to subsequent change in interviewing behavior and thus improve the overall quality of interviews. While this level of analysis was beyond the scope of the present study, it is an important consideration and questions are raised regarding what level of training would be necessary to produce competent interviews that adhere to the evidence-based principles. This may include practice of dummy interviews with real-time feedback. Due to well-documented interviewer drift,
supervision of actual child sexual abuse interviews and subsequent consultation may also be necessary.

**Strengths**

This study had a number of methodological strengths. First, this is one of very few studies that actually evaluated a forensic interviewing training. This is an area that is relatively unexplored in spite of the frequency with which child sexual abuse interviews are conducted, and in spite of the popularity of forensic interview trainings. This study sought to begin addressing issues related to forensic interviewing trainings (such as whether they have an effect on knowledge, and whether individuals undergoing the training actually enjoyed it and were satisfied) and not just assume that they do. Additionally, this training was developed on evidence-based principles of forensic interviewing. This is an important point as trainings that are bound to certain forensic interviewing protocols may or may not be evidence-based. For example, the popular CornerHouse training, based on the RATAC protocol (CornerHouse, 1990, 2003, 2007 as described in Anderson, 2007), teaches the use of anatomical diagrams for body-part identification. Anatomical diagrams, even used only for body-part identification after a disclosure has been made, are not supported by the literature as a forensic interviewing aide (for a review see Elliott, O’Donohue & Nickerson, 1993). Further, some interviewers resort to using these diagrams prior to any disclosures being made, and this is a problematic interviewing technique that may lead to increased suggestibility (e.g., Gardner, 1989, Terr, 1988).

Another strength is the combination of quantitative and qualitative data collected in the study. In regards to the content validation, experts provided very specific feedback
that was subsequently incorporated into the training, improving the overall quality of the training. In regards to the pilot study, data obtained from the Forensic Interviewing Knowledge questionnaire revealed that participants in the training condition increased their knowledge of basic interviewing principles, and was consistent with their self-report on the consumer satisfaction measure. Thus, we have multiple data points confirming that our training did indeed increase knowledge of basic principles of forensic interviewing. Additionally, responses from the Training Satisfaction Questionnaire revealed detail feedback from participants which will allow up to make meaningful changes in our training in order to improve the overall quality and experience of trainees.

Limitations

The present study possessed several important limitations that must be considered in the interpretation and extrapolation of findings. Preferably, exploratory qualitative evaluations would have been used to establish face and content validity and there should be large focus groups comprised of many experts that perform several rounds of reviews. However, this level of analysis is costly and was not attainable without grant funding. Unfortunately, we did not obtain grant funding and instead several experts were enlisted to review the training on constructs relevant to forensic interviewing, demonstrating the acceptability of the training. Additionally, results are based on a sample that was largely comprised of undergraduate and graduate students, and individuals not working in law enforcement or social work. Although we reached out to both local and national organizations including police departments, sheriff’s offices, associations of investigators, and social workers, we received minimal response from these groups. In fact, only one social worker and one law enforcement office completed the study. Larger
groups of social workers and law enforcement personnel would have permitted more in depth analyses. Specifically, questions could be asked such as whether the training was more effective for some individuals than others and whether individuals working on child sexual abuse investigations would have rated the training differently based on personal experience with forensic interviewing. Additionally, whether pre-existing differences between these groups and the more general population (i.e., students and individuals in non-law enforcement and non-social work occupations) would have been an interesting question to explore. Professionals who interview children who may have been abused ought in theory to have a better knowledge basis for empirically-supported principles of forensic interviewing. However, forensic interviews analyzed over the past four years suggests that this may not be an accurate assumption (O’Donohue, Fanetti, Cirlugea & Vechiu, in progress).

Another limitation is in regards to differences that were found in demographic characteristics between the two groups. Specifically, there were more graduate students in the experimental group. These differences may have contributed to our results. However, this is unlikely as graduate students were recruited from clinical psychology programs and would have had little exposure to most of the content in the training. Nevertheless, using groups that were equal on all demographic characteristics would enable us to draw stronger conclusions about our results. An important limitation also exists with respect to the measure utilized to evaluate interviewer knowledge and application of forensic interviewing principles. As stated previously, no such measures were identified in the literature and as a result we had to develop our own. Although some of the items were designed to specifically evaluate application of learned
knowledge to actual cases of child sexual abuse (e.g., by identifying biasing techniques used, by assessing what the interviewer should have done instead, etc.), an ultimate test would involve application of these skills in real time. This would likely require participants to conduct their own forensic interviews (or portions of). However, such a test was beyond the scope of the present study. The training may be used to develop a foundation of basic principles prior to being trained in a specific interviewing protocol or as a refresher for professionals who are already conducting forensic interviews with children. We see this training as a necessary, but not sufficient element in child sexual abuse interviewing investigations and individuals would need further training before they are deemed competent enough to conduct interviews with children who may have been sexually abused.

**Future Directions**

The hundreds of poorly conducted forensic interviews reviewed by this writer served as motivation for the present study. They highlighted a need for a training in evidence-based interviewing principles. Biasing techniques, which by definition demonstrate non-adherence to evidence-based principles, have been shown to contaminate children’s statements (e.g., Bruck, Ceci & Francoeur, 1999, Garven, Wood, Malpass & Shaw, 1998, Goodman & Aman, 1990, Orbach & Lamb, 2000, Principe & Ceci, 2002, Roberts, Lamb, & Steinberg, 1999). Clearly these biasing techniques have serious implications for the forensic interview and the justice system as a whole (Rabinowitz, 2003). Wrongly accusing someone of child sexual abuse may lead to a person serving time that he or she does not deserve, to money being spent on defending against false allegations and any appeals, having to register as a sex offender, social
consequences of now being a felon, etc. On the other hand, failing to accurately identify a
perpetrator can lead to a lack of justice, potentially continued abuse of the child and/or
other children, and the possibility that someone else may be wrongfully accused of the
same crime. Child sexual abuse investigations take a toll on families on both sides, and a
lack of justice in the legal system can lead to further strain. Thus, the present study
sought to provide appropriate training so that knowledge of evidence-based interviewing
principles would be increased and biasing techniques minimized as a result. The
overarching goal is to increase the quality of forensic interviews so that more accurate
and thorough information is obtained from the child.

Results of the study revealed that our newly-developed training was determined to
be acceptable and feasible by content experts, that it increased interviewer knowledge of
evidence-based principles, and that it scored well on a measure of consumer satisfaction.
The study resulted in content that could be delivered in an online-video format, which
will increase accessibility to the training and address issues related to cost including for
time off of work, travel, and accommodations. Important feedback was provided by
participants who underwent the training that will be used to revise this training in the
future. Specifically, should grant funding be pursued in the future, this could be used to
hire an instructional designer to make the training more interactive and enjoyable. An
instructional designer’s job is to develop modes of instruction that are based on
instructional theory to promote learning. Even without grant funding certain measures to
increase the quality of the measure could be taken, for example by breaking up the video
into shorter videos for each module, adding more videos, and switching between
PowerPoint voiceover, talking head, and other instructional tools.
A next step would also be to disseminate this training to those individuals who interview children who have been sexually abused; specifically, this includes law enforcement, social workers, and some psychologists. Other individuals who are part of child sexual abuse investigations and who may come into contact with children who may have been abused may also benefit from this training, including nurses, doctors, and children’s advocates. Given the online platform of the training, this could be easily circulated by emailing a YouTube link of the training, or by embedding it within a larger website dedicated to empirically-supported trainings. In fact, such a website is currently being considered by some of the parties associated with this study. Other individuals within the legal system, including judges, may also benefit from this training. Efforts could be expanded to reach all the target audiences through judicial colleges, police academies, organizations that put on trainings for continuing education, and rural law enforcement agencies.

Another consideration is the future use of the Forensic Interviewing Knowledge Questionnaire. This test may be used in the future to determine basic competence in evidence-based principles of forensic interviewing that would determine whether an individual was ready to undergo a protocol training. Certain cutoffs could be used to differentiate between those who had sufficient knowledge of basic principles, and those failing to score above the cutoff could be remediated using the newly developed training. Additionally, given that confirmation bias is at the core of much of problematic interviewer behavior, assessing whether certain individuals (for example, novice vs. seasoned interviewers) may have different attitudes regarding the interviewer and what ought to occur prior to administering the test may be useful. Some interviewers have
certain assumptions prior to an interview, such as that the child was abused or else he or she wouldn’t be the subject of a child sexual abuse investigation and evaluating how and if these biases interfere with the learning of the evidence-based principles and whether different learning effects occur may be helpful.

Lastly, although this study set out to begin exploring questions regarding forensic interviewing trainings, many unanswered questions remain, especially regarding the interviews that the training would produce. It would be interesting and necessary to determine whether the newly developed training will in fact affect the behavioral intention of the interviewers, i.e., whether they will actually change their behavior as a result of the training. Thus, it would be useful to ask interviewers whether they plan to use the knowledge they have learned in future child sexual abuse interviews.

Overall, it may be best practice to place both the trainings and subsequent interviews into a quality improvement system. Since there is so much to be known about the quality of the interviews themselves as well as the quality of a particular interviewing training, it may be best practice for data to be continuously gathered on several quality dimensions. For example, forensic interviews conducted by professionals who have undergone the training could be compared to their interviews prior to the training, or for adherence to the evidence-based principles. Subsequently, feedback would be provided to the interviewers. This should be done, as in all quality improvement procedures, in a supportive manner. Conducting these interviews well is an extremely difficult task, given the idiosyncratic nature of each child and case, the complexity of the techniques, as well as functioning in a rather complex legal and even clinical context. In addition, the trainings themselves need to be constantly evaluated and improved. Interviewer feedback
can be gained regarding issues such as ambiguities or areas where more support is needed. Feedback from other stakeholders can also be systematically gathered, e.g., from parents, prosecuting attorneys and defense attorneys. In addition, this quality improvement system ought to gather some of the key information that is missing, benchmark these numbers, and constantly try to improve these.
CHAPTER V. REFERENCES

10.1016/j.chiabu.2004.03.016


Experimental Child Psychology, 108(1), 44-60. doi:10.1016/j.jecp.2010.06.007


Lamb, M. E., Orbach, Y., Sternberg, K. J., Aldridge, J., Pearson, S., Stewart, H. L., & ...


O’Donohue, W.T., Fanetti, M., Cirlugea, O. & Vechiu, C. (in progress). An evaluation of forensic interviews with children who may have been sexually abused.


Powell, M. B., & Snow, P. C. (2007). Guide to questioning children during the free-
narrative phase of an investigative interview. Australian psychologist, 42(1), 57-65.


on verbal fluency in dyadic communication. Journal of Psycholinguistic Research, 12, 4443–4455.


APPENDIX 1. FORENSIC INTERVIEWING KNOWLEDGE QUESTIONNAIRE

1. If a child is reluctant to talk about abuse it may be due to:
   a. Different cultural expectations
   b. Not understanding understand what abuse is
   c. Both of the above
   d. None of the above

2. True or False
   In the cases that penetration occurs, there is generally some medical evidence supporting this.

3. Confirmation bias refers to (check all that apply):
   a. Being objective and finding out what the child has to say about a number of possibilities
   b. Falsely concluding a child has been abused when they have not
   c. Exploring alternative hypotheses for the child’s statements
   d. Selectively attaching greater weight to evidence that supports one’s own beliefs
   e. Pursuing information in favor of a specific outcome while ignoring information that disconfirms that same outcome

4. At the close of an interview, the interviewer should do which of the following: (check all that apply)
   a. Thank the child
   b. Give the child a small gift to show them appreciation for their cooperation
   c. Validate the child’s experience
   d. Ask the child if they have any questions or anything else to tell that wasn’t covered
   e. Schedule a follow up call to see how the child is doing

5. True or false
   Suggestibility involves knowingly and intentionally saying false information.

6. True or False
   If the interviewer spends enough time talking to a child, he or she will eventually establish rapport with the child.

7. If the child fails to disclose sexual abuse in the interview (check all that apply):
   a. The interviewer should ask the child about the perpetrator the child had mentioned in the initial interview with the police officer
   b. The interviewer should ask the child if anyone touched them inappropriately
   c. The interviewer should ask the child why they think they’re being interviewed
   d. The interviewer should remind the child that they’re there because someone suspects they’ve been sexually abused
8. True or False
Most interviewers nowadays know to test a wide set of hypotheses about the child’s statements.

9. Which of the following should the interviewer avoid with children from a different culture? (check all that apply)
   a. Treating each child as an individual
   b. Using parents or siblings to help translate for a child speaking a different language
   c. Not conducting the interview
   d. Considering consultation with another professional
   e. Matching the gender of the child with that of the interviewer

10. Some ways to deal with children younger children with limited communication abilities include:
    a. Extend the interview to account for their short attention span and distractibility
    b. Use short sentences
    c. Use questions like who, what, when, where and why to get more information
    d. Use pronouns like “him” or “her” e. b and d

11. True or False
It is best to treat each child as an individual during the forensic interview process.

12. True or False
Interviewers are most interested in peripheral details.

13. When is the best time to assess how well a child can communicate? (check all that apply)
    a. The initial rapport building stage
    b. At any point in the interview
    c. The interviewer should ask their parents
    d. The interviewer can base their ability off of their age, and doesn’t need to assess their skills independently.

14. True or False
Nowadays, there is little convincing evidence that interviewers are continuing to use suggestive techniques with children.

15. Which of the following is/ are NOT an example/ examples of a close-ended question? (check all that apply):
    a. Who touched you under your pants?
    b. Did he touch you inside your pants, outside, or somewhere else?
    c. Where did the tickling happen?
    d. And then what happened after he touched you there?
    e. When did he last touch you?
16. True or False
Fantastical details such as Satanic abuse are common in sexual abuse allegations and as such tend to be evidence that confirms the abuse.

17. What should the interviewer do when inquiring about why the child is being interviewed? (check all that apply)
a. Ask the child if someone touched his or her private parts
b. Use an anatomical diagram to ask if anyone touch him anywhere on the picture
c. Ask the child what others have told him about the interview
d. Ask if someone threatened or bribed the child

18. True or False
Recantations only occur when someone has made a false allegation, then takes it back.

19. Which are examples of logistical implausibilities (mark all that apply):
a. Claims that the child was anally raped and this tickled
b. Claims that the child was sexually abused while on a parent’s lap with other family members
   c. Claims that the child was first abused 4 times, then 8 times
d. Claims that there was penile-vaginal penetration but the child’s pants were on the entire time

20. True or False
The following is an example of acting on a cultural bias: when the interviewer interacts with a child from a different culture, he or she asks the child about his or her level of comfort discussing certain topics.

21. True or False
Closed-ended prompts are to be avoided at all costs.

22. True or False
Lengthy delays in reporting are uncommon and in most cases, occur within the first 6 months of abuse.

23. A good interviewing room should be:
a. Filled with pictures and toys to make the child feel comfortable
b. Clean and have limited decorations, toys and other distractions
c. Painted in neutral tones and have soothing music playing
d. Filled with items from the child’s home so that they feel comfortable

24. True or False
It is preferable to have the child’s parents or siblings in the interview room so the child feels more comfortable.

25. The day care sexual abuse trials of the 80’s and 90’s brought to light (check all that apply)
a. How young children provide very little information to open-ended prompts
b. How suggestive techniques used by interviewers resulted in false allegations of sexual abuse
c. How daycare workers engaged in satanic rituals and child sexual abuse
d. How suggestive techniques used by interviewers resulted in false denials of sexual abuse

26. Which of the following is not a cultural factor:
   a. Sex
   b. Disability
   c. Socioeconomic status
   d. All of the above are cultural factors
   e. None of the above are cultural factors

27. True or False
   Children usually don’t make false statements about things that happened to their own bodies.

28. What should the interviewer do if he/she suspects that there are personological details present (mark all that apply):
   a. Consult with a professional
   b. Diagnose the child with the appropriate mental disorder
   d. Talk to the child’s parents
   d. Nothing because personological details do not affect child sexual abuse allegations, only suggestibility does

29. True or False
   Children are more likely to acquiesce to a response when then person asking the question in a peer rather than an adult.

30. True or False
   Young children can provide details such as time, place, and participants in a forensic interview.

31. When compared to older children, younger children (check all that apply):
   a. Have more limited vocabularies
   b. Cannot tell the difference between the truth and a lie
   c. Are less descriptive in their statements
   d. Don’t pronounce words as well

32. Fantastical details made by the child should (check all that apply):
   a. Be ignored because children never give such details
   b. Be ignored because young children have wild imaginations
   c. Be ignored because they are a sign of a true allegation
   d. Explored with the child
e. Told to the child’s parents because the child may have a mental disorder

33. Which of the following scenarios would allow the interviewer to rule out stake? (check all that apply)
a. The child ran away from home
b. The child’s parents are in a custody battle
c. The child’s stepfather has been beating him
d. The child’s sister got a lot of attention when she disclosed abuse
e. none of the above

34. Which of the following is accurate about false allegations (check all that apply):
a. Children are less likely to make false allegations in the context of a custody battle
b. We don’t know the exact rate at which false allegations occur
c. Children only make false allegations in about 1% of cases
d. Research has shown that about 50% of child sexual abuse allegations are false

35. True or False
Using an interpreter will ensure that the child understands what the interviewer is asking, and that the interviewer understands what the child is saying to him/her.

36. True or False
It is considered good practice to ask the child if he or she promises to tell the truth.

Please read the paragraph below and answer the following questions:

The interviewer told Sally that she first wanted to find out a little more about her. She asked Sally her age and full name. Sally replied she is 13 and her full name is Sally Smith. The interviewer asked Sally how she likes school, and Sally replied she is pretty good in school and she gets good grades. The interviewer then asked her where she’s currently living, and Sally stated she was living in Reno but was getting ready to move to Carson City. The interviewer asked Sally why she was there. This conversation lasted about 5 minutes.

37. True or False
The interviewer spent sufficient time building rapport with Sally.

38. What are some things that the interviewer should have done differently in building rapport with Sally? (Check all that apply)
a. Nothing, the interviewer did a good job building rapport
b. The interviewer should have asked about more topics
c. The interviewer should have asked Sally if she would feel more comfortable with her mother in there
d. The interviewer should have used open-ended questions

39. Which of the following types of questions are preferred in forensic interviews?
a. Repetitive questions
b. Leading questions
c. Open-ended questions
d. Closed-ended questions
e. Directive questions

40. During the interview process, a good forensic interviewer should be (check all that apply):
a. Objective
b. Subjective
c. Opinionated
d. On the side of the child

41. What two types of errors can be made in a forensic interview?
a. False allegations and false positives
b. False charges and false allegations
c. False negatives and false positives
d. False errors and false negatives

42. In order to integrate and draw conclusions about the sexual abuse evidence, it is good practice for the interviewer to: (check all that apply)
a. List all relevant hypothesis that were tested
b. List all potentially supportive and unsupportive information
c. Highlight any potentially “questionable” evidence such as inconclusive medical examinations
d. Let the team integrate all information across all interested parties

Please read the following portion of the transcript taken from the McMartin trial. In this part of the interview, the child is using an alligator toy (Mr. Alligator) as a representation of himself. After reading the transcript, please answer the questions.

MacFarlane: You know that, Mr. Alligator? That means you're smart, 'cause that's the same song the other kids knew and that's how we really know you're smarter than you look. So you better not play dumb, Mr. Alligator.
Boy: Well, I didn't really hear a whole lot. I just heard someone yell it from out in the _ Someone yelled it.
MacFarlane: Maybe. Mr. Alligator, you peeked in the window one day and saw them playing it, and maybe you could remember and help us.
Boy: Well, no, I haven't seen anyone playing Naked Movie Star. I've only heard the song.
MacFarlane: What good are you? You must be dumb.
Boy: Well I don't know really, umm, remember seeing anyone play that, 'cause I wasn't there, when - I -when people are playing it.
MacFarlane: You weren't? You weren't? That's why we're hoping maybe you saw, see, a lot of these puppets weren't there, but they got to see what happened.
Boy: Well, I saw a lot of fighting.
MacFarlane: I bet you can help us a lot, though, 'cause, like, Naked Movie Star is a simple game, because we know about that game, 'cause we just have had twenty kids told us about that game. Just this morning, a little girl came in and played it for us and sang it just like that. Do you think if I asked you a question, you could put your thinking cap on and you might remember, Mr. Alligator?

Boy: Maybe.

MacFarlane: You could nod your head yes or no. Can you remember who took the pictures for the naked-movie-star game? That would be a great thing to feed into the secret machine [the video camera], and then it would be all gone, just like all the other kids did. You can just nod whether you remember or not, see how good your memory is.

Boy: [Nod's puppet's head.]

MacFarlane: You do? Well, that's remarkable. I wonder if you could hold a pointer in your mouth, and then you wouldn't have to say a word and [boy] wouldn't have to say a word. And you could just point.

Boy: [Places pretend camera on adult male nude doll using alligator puppet] Sometimes he did.

MacFarlane: Can I pat you on the head for that? Look what a big help you can be. You're going to help all these little children, because you're so smart...OK, did they ever pose in funny poses for the pictures?

43. MacFarlane used social influence when she said (check all that apply):
   a. “What good are you? You must be dumb.”
   b. “You’re going to help all these little children, because you're so smart.”
   c. “Because we know about that game, 'cause we just have had twenty kids told us about that game.”
   d. “That's why we're hoping maybe you saw, see, a lot of these puppets weren't there, but they got to see what happened.”

44. MacFarlane punished the child’s answers when she said (check all that apply):
   a. “You weren't? You weren't? That's why we're hoping maybe you saw, see, a lot of these puppets weren't there, but they got to see what happened.”
   b. “Just this morning, a little girl came in and played it for us and sang it just like that.”
   c. “What good are you? You must be dumb.”
   d. “That would be a great thing to feed into the secret machine [the video camera], and then it would be all gone, just like all the other kids did.”

45. MacFarlane inappropriately reinforced the child when she said (check all that apply):
   a. “You’re going to help all these little children, because you're so smart”
   b. “Do you think if I asked you a question, you could put your thinking cap on and you might remember, Mr. Alligator?”
   c. “Mr. Alligator, you peeked in the window one day and saw them playing it, and maybe you could remember and help us.”
   d. “You can just nod whether you remember or not, see how good your memory is.”
46. Which of the following scenarios would allow the interviewer to rule out outcry? (check all that apply)
   a. The child heard that her younger sister disclosed abuse by her father and decided to tell about her abuse too
   b. The child’s mother was driving the child to her biological father’s house when the child started crying and told her that her father had been abusing her
   c. The child got in trouble at school for asking to see another boy’s penis
   d. The child was punished by her mother for skipping school and then disclosed abuse

47. Why might there not be medical evidence in cases of child sexual abuse?
   a. Children sometimes don’t report the abuse right away
   b. Acts perpetrated did not involve penetration
   c. Children’s bodies heal incredibly quickly
   d. a and b
   e. a, b and c

48. Narrating a past event and forgetting to mention a detail is called:
   a. forgetting
   b. conflating
   c. error of commission
   d. error of omission

49. What should an interviewer do if the child makes inconsistent statements?
   a. Explore alternative hypothesis for the statements
   b. Ask the child repeatedly about the inconsistent statements
   c. Interview collateral informants about what actually happened
   d. Nothing because inconsistent statements are not typical in cases of child sexual abuse

50. True or False
   Developmental disabilities generally begin around the time children go into the 1st grade.

51. Which of the following are examples for what it means for a child to “think in concrete terms”? (check all that apply)
   a. The interviewer asks the child what happened in their house. They answer that nothing happened because the alleged abuse took place in an apartment.
   b. The interviewer asks the child what happened in their house. They answer that the alleged abuse occurred, but they correct the interviewer, explaining that it happened in their apartment.
   c. The interviewer asks the child what happened in their house. They don’t answer and instead use nonverbal behavior.

52. Which of the following are signs that the child is uncomfortable with the interviewer?
   a. The child is looking down or away
   b. The child is saying repeatedly that he or she wants a break or to stop the interview
   c. The child is answering, “I don’t know” repeatedly
Please read the following forensic interviewing transcript portions (names and details have been changed) and answer the questions:

Sally reported that the gentleman smacked her butt. The interviewer asked, “Do you have any idea why he would have done that?” Sally responded, “He was a pervert”. The interviewer then asked, “So why do you think that he would of done that?” Sally replied, “I don’t know”. The interviewer then asked, “When you say, ‘pervert’, what do you think his reasoning was behind doing that?”

53. The interviewer used which biased interviewing technique(s)? (check all that apply)
   a. Encouraging speculation
   b. Repetitive questioning
   c. Disconfirming the response
   d. Inappropriate reinforcement
   e. Conformity press

The interviewer asked Sally, “Was he muscular or was he, could you tell?” Sally replied he was kind of thin. When asked if she remembered what shoes he was wearing, Sally shook her head. When asked about belt or pants, Sally shook her head. When asked if he had a watch that she saw, Sally stated no. The interviewer then asked, “Could you tell if he was wearing a ring by his fingers?” Sally shook her head. The interviewer asked, “Was he wearing a hat? What color was his hair?” Sally stated she thought it maybe was brown. The interviewer then asked, “Was his hair long or short?” Sally stated short.

54. The preceding questions were examples of (check all that apply):
   a. Repetitive questions
   b. Open-ended questions
   c. Multiple choice questions
   d. Closed-ended questions
   e. Leading questions

55. What are some mistakes the interviewer made? (check all that apply, if any)
   a. The interviewer did not make any mistakes
   b. The interviewer failed to ask open-ended questions
   c. The interviewer disconfirmed Sally’s responses
   d. The interviewer rapid-fired questions at Sally’s and did not allow her enough time to answer them thoroughly
   e. The interviewer failed to correct Sally when she said she thought the iPhone maybe was brown

Regarding the second abuse incident, the interviewer asked Sally, “So, now you were saying that right after this happened, that he would touch you more. Uh, how many times
between the two incidents would you say that he had put his hands down your pants while just being around home? If you were to guess a number of times that probably happened, what would you say?”

56. The interviewer used which biased interviewing technique?
   a. Encouraging speculation
   b. Repetitive questioning
   c. Disconfirming the response
   d. Inappropriate reinforcement
   e. Conformity press

The interviewer asked Sally, “So you - because I got that report and you talked about a lot of the stuff like you told Officer Smith the first night matched up. - I know you said you saw some things like him making out with her at different times. Have you guys ever sat down and talked whether it would be on the phone, on Facebook messenger?”

57. The interviewer used which biased interviewing technique?
   a. Encouraging speculation
   b. Repetitive questioning
   c. Disconfirming the response
   d. Inappropriate reinforcement
   e. Conformity press

58. Which of the following are developmental disabilities? (check all that apply)
   a. Autism Spectrum Disorder
   b. Reactive Attachment Disorder
   c. ADHD
   d. Specific Learning Disorder
   e. Conduct Disorder

59. The interviewer should NOT assess which of the following during an interview (check all that apply):
   a. Whether or not the child was threatened or bribed
   b. Whether or not the child is uncomfortable discussing certain topics
   c. Whether or not the child is attempting to please an authority figure
   d. Whether or not the child’s family believes the abuse occurred

60. What should an interviewer NOT do if they notice the child has stopped paying attention? (check all that apply)
   a. Stop the interview and reschedule for another day
   b. Use anatomically correct dolls to reengage the child
   c. Try and refocus him/her verbally
   d. Take a break
   e. Ask a parent or guardian to come in and help the interviewer
61. True or False
Research indicates that children reporting false events are more likely to repeat the same details across interviews than those reporting true events.

62. Suggestibility is likely to occur (check all that apply):
   a. From dreams
   b. Within the interview due to biasing techniques used by the interviewer
   c. When open-ended questions are asked in the interview
   d. Outside of the interview due to interactions with others

63. An interviewer should explore a child’s outcry by doing which of the following (check all that apply):
   a. Ask the child to whom they have told about the abuse
   b. Ask the child about the circumstances around the abuse
   c. Ask the child about reactions to the disclosure
   d. Ask the child if anyone believed them

64. True or False
The interviewer should avoid open-ended prompts like “Tell me all about that” with young children because they provide very little information in response to them.

65. True or False
Suggestibility is only a theory with little research backing it up.

66. When speaking to a child who was born here but whose parents speak a different language the interviewer should: (check all that apply)
   a. Ask the child what language he speaks at school
   b. Ask the child what language he speaks at home
   c. Ask the child’s parents what the child’s preferred language is
   d. Ask the child what his preferred language is

67. Which of the following describes how social expectations might influence a child’s report? (check all that apply)
   a. Some children are less inclined to talk about themselves because their culture discourages focusing on the individual
   b. Some children are less likely to disclose abuse if they have less friends at school.
   c. Male children are less likely to disclose abuse because they don’t want to be labeled a “homosexual”
   d. Some children are less likely to talk about abuse because certain things are kept “in the family”

68. True or False
It is important to reassure the child that the perpetrator will no longer be able to harm him or her