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Document Title: An Evaluation of Victim Centered, Trauma Informed Interview Training for Sexual Assault Investigators using Standardized Patient Actors: A Randomized Controlled Trial

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Document Number: 306563

Date Received: May 2023

Award Number: 2018-VA-CX-0003

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*An Evaluation of Victim Centered, Trauma Informed Interview Training for Sexual Assault Investigators
using Standardized Patient Actors: A Randomized Controlled Trial*

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June 30, 2022

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This project was supported by Award ID 2018-VA-CX-0003, awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect those of the U.S. Department of Justice.

Abstract

In 2019, the National Institute of Justice funded the University of Louisville (UofL) and the Kentucky Department of Criminal Justice Training (KYDOCJT) to form a multidisciplinary team that implemented and evaluated a 40-hour training course on victim centered, trauma informed (VCTI) interview techniques for sexual assault investigators. The UofL and KYDOCJT team sought to examine the effectiveness of VCTI interview training coupled with an established healthcare training method – standardized patient training – on improving police investigators' performance in interviews with sexual assault victims. In the healthcare field, standardized patient training programs use actors to portray patients by simulating real symptoms and problems. Medical students are then tasked with interviewing the standardized actors to identify appropriate prognoses and healthcare treatment plans. Medical student participants are evaluated based on their performance in the interviews with the actors. This training exercise has been successful at improving medical students' performance in simulated encounters with patients. Specifically, standardized patient training participants have been found to show more empathy toward patients, deliver negative prognoses in a more compassionate manner, and provide more detail regarding patient care options.

This study used a randomized experimental design to assign 8 training courses to treatment (4 courses) and control (4 courses) groups between November of 2019 and August of 2021 to assess the effects of training on behavioral, attitudinal, and cognitive outcomes. Police officers participated in a 40-hour training program focused on improving responses to survivors of sexual assault by exposing officers to VCTI interviewing techniques. A portion of the training used standardized actors to portray survivors of sexual victimization in simulated interviews with officers enrolled in the course. Simulated interviews were video and audio recorded. The control group completed simulated interviews on the first day of training after a brief 1-hour introduction to the course. Control group members also completed a second interview after learning about VCTI techniques. The treatment group completed simulated interviews after receiving the VCTI training. This provided an opportunity to conduct both between-subjects and within-subjects comparisons to assess the effects of training on officer behavior. The between-subjects comparisons were made by comparing the control groups' pre-training interviews and the treatment groups' post-training interviews. The within-subjects comparisons were made by comparing the control groups' pre- and post-training interviews. Survey instruments were used to collect information on training participants' perceptions of victims, indicators of rape myth acceptance, knowledge of trauma informed practice, and comfort with interviewing sexual assault victims before and after the training program. All survey measures were collected pre-intervention, post-intervention, and during a long-term follow-up in the months after the training was received. Additionally, all videos were coded to assess any differences in interview performance between the control and experimental groups.

This report discusses the: (a) project background including the development and implementation of the training program, (b) use of standardized actors in the training program, and (c) outcomes from the experimental training evaluation. Overall, results indicated that the training program was successful in producing improvements in officers' knowledge of trauma informed practices, perceptions of victims, comfort with interviewing, and use of trauma informed techniques in interviews with standardized actors.

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Acknowledgements

We are extremely thankful to several groups and individuals for their support on this project. First, we thank the National Institute of Justice (NIJ) for awarding funding to support the research, especially Dr. Angela Moore and Abby Hannifan. Without your guidance and the NIJ's financial support, this research and training could not have occurred. We also thank the Kentucky Department of Criminal Justice Training for agreeing to participate in and support this project with their training facilities and instructors. Specifically, we thank Deputy Commissioner John Schwartz and Director of Training Operations Frank Kubala for their initial approval of the study and their work over the last four years to make sure all training courses were completed despite setbacks due to the COVID-19 pandemic. Additionally, we thank former KYDOCJT instructor James "Jim" Root for his work in both developing the training curriculum, as well as delivering the content for all training courses. Without Jim, this project would not have been possible. Thanks to the KYDOCJT staff and trainers who helped us along the way, working with your organization over the last few years has been a dream researcher-practitioner partnership. We also owe thanks to all the officers who participated in the training program and evaluation. This study would not have been possible without their willingness to improve their investigative interviewing skills and participate in the simulated interviews. Finally, thanks to the Kentucky Association of Sexual Assault Programs and survivor advocates who assisted in the development of the standardized actor scripts. Your insights and advice made our project better and more beneficial to the training participants.

Finally, a study of this size cannot occur without a large amount of behind-the-scenes efforts. Accordingly, we thank the standardized actors who learned the scripts and made the simulated interviews as realistic as possible. We also thank the University of Louisville's Departments of Criminal Justice and Theatre Arts research assistants who provided their help in data collection and spent several hours in the field (both traveling to and from training sites, and downloading and/or coding audio/video data). These research assistants include Caisey Cole, Bryant Plumlee, Ivan Benitez, Rychelle Moses, and Ana Prata. Finally, we thank the University of Louisville for their support managing the grant.

Background

This project addressed several objectives and priority areas outlined by the National Institute of Justice's Violence Against Women program in funding solicitation number NIJ-2018-13702. First, our research team used a randomized experimental design to evaluate a new training program offered to officers in Kentucky that aimed to improve police officers' response to victims through exposure to victim centered, trauma informed (VCTI) interview techniques. Second, our team was interdisciplinary, including members of the Kentucky Department of Criminal Justice Training (KYDOCJT), the Kentucky Association of Sexual Assault Programs (KASAP), and the University of Louisville's Departments of Criminal Justice and Theatre Arts. Third, the study provided officers with hands-on experiential learning by conducting interviews with standardized actors trained to portray survivors of sexual assault. Throughout the evaluation, our team developed and implemented a 40-hour training program to provide officers with the tools to conduct trauma informed interviews with victims, and evaluated the short and long-term effects of the training program on officers cognitive, attitudinal, and behavioral outcomes. This report describes these efforts including: (1) a discussion of the sexual assault investigator training literature, (2) sexual assault investigator training efforts in Kentucky, (3) the development of the VCTI training program, (4) the use of actors in the VCTI training program, and (5) the outcomes from the training evaluation.

Literature Review

Sexual Assault Case Processing and the Need for Police Training

Studies have documented the poor treatment of sexual assault survivors by the criminal justice system over the past five decades (Brownmiller, 1975; Burt, 1980; R. Campbell & Raja, 2001; Spohn & Horney, 1992; Lorenz & Jacobsen, 2021; Lorenz et al., 2021), indicating that survivors have often been met with skepticism and mistreatment when reporting victimization to law enforcement (Campbell, 2012; Lisak et al., 2010; Lonsway, 2010; Murphy-Oikonen et al., 2020). Termed secondary trauma – or revictimization – (Campbell & Raja, 1999; Maier, 2008; Ullman & Filipas, 2001), these negative responses to reports of sexual violence adversely affect survivors causing cynicism toward law enforcement and/or disengagement from the criminal justice system, as well as additional trauma such as PTSD and other negative physical and mental health consequences (Davis et al., 2020; Trickett et al., 2011). Research has shown that this secondary trauma has reduced victim engagement with the criminal justice system (Bostaph et al., 2021; Lorenz et al., 2021; Murphy-Oikonen et al., 2020), which a recent meta-analysis demonstrated is the strongest predictor of arrest in sexual assault cases (Lapsey Jr. et al., 2021). Additionally, secondary trauma has contributed to high attrition rates in cases of sexual violence, which has been reported to be as high as 80% in some jurisdictions (Morabito et al., 2019).

One contributor to secondary victimization has been the reliance of some criminal justice professionals on rape myths (B. Campbell et al., 2015; Hansen et al., 2018; Sleath & Bull, 2017), or misguided stereotypes about sexual assault cases and victim behavior before, during, and after a sexual assault (Ahrens, 2006; Ask, 2010; Bollingmo et al., 2007; B. Campbell et al., 2015; Sleath & Bull, 2012). For example, some police officers may adhere to the myth that sexual assaults involve stranger cases in which the offender used force, and the victim sustains visible

injury (e.g., bruises, lacerations) (Du Mont et al., 2003; Estrich, 1987; Parratt & Pina, 2017). Additionally, research has demonstrated that criminal justice practitioners often expect survivors of sexual assault to report promptly (Frazier & Haney, 1996; LaFree, 1981), be emotionally expressive (Bollingmo et al., 2007), and have the ability to recall all details of an assault accurately and consistently across multiple stages of the criminal justice process (Alderden & Ullman, 2012; Campbell et al., 2015). When cases do not match these misperceptions, victim allegations are often viewed with skepticism and case attrition is likely (R. Campbell et al., 2001; Frohmann, 1991; Parratt & Pina, 2017; Shaw et al., 2017).

Following these stereotypes when making decisions about the veracity of sexual assault allegations is problematic, as research has demonstrated that most cases do not involve victim injury and most survivors know their assailants (Morabito et al., 2019). Additionally, neurobiological research on the effect of severe trauma has indicated that trauma may hinder survivors' ability to immediately and consistently recount all details of victimization (R. Campbell, 2012). Similarly, research has documented that survivors display a wide range of emotional responses when reporting victimization to police, including emotionally expressive (e.g., crying, visibly troubled) and emotionally controlled (e.g., emotionless, flat affect) (Ask, 2010; B. Campbell et al., 2015; R. Campbell, 2012). Misconceptions regarding victim injury in sexual assault cases are also troublesome given findings that sexual assault survivors often describe elements of tonic immobility when reporting victimization to police investigators (Fuse et al., 2007; Heidt et al., 2005; Lonsway et al., 2020; Möller et al., 2017). Tonic immobility research has demonstrated that in addition to "fight" or "flee" responses to victimization, often the brain takes over bodily function, causing victims of trauma to display a subconscious "freeze" response that prevents them from being able to resist an attack (Galliano et al., 1993;

Heidt et al., 1993; R. Campbell, 2012; Marx et al., 2008; Möller et al., 2017). More specifically, victims of severe trauma may become uncontrollably stiff, unable to resist an attack, and natural biological responses (e.g., blood pressure reduction) may occur to reduce severity of injury (Campbell, 2012; Marx et al., 2008). Tonic immobility research couples well with research highlighting accounts from survivors of sexual assault who recalled being physically incapable of resisting an assailant (Marx et al., 2008; Möller et al., 2017)

To combat the adherence to rape myths and secondary trauma, in the past two decades, practitioners, advocates, and researchers have called for training aimed at improving criminal justice responses to sexual assault survivors. These calls to action have highlighted the need for police officers to receive training on victim centered, trauma informed (VCTI) interviewing techniques that focus on interacting with survivors in a trauma informed manner to facilitate victim engagement, reduce adherence to rape myths, and improve case attrition rates (B. Campbell et al., 2020, 2021; R. Campbell, 2012; Darwinkel et al., 2013; End Violence Against Women International [EVAWI], 2016; IACP, n.d.; Franklin et al., 2020; Lorenz & Maskalay, 2018; Mourtgos et al., 2021; McKee et al., 2020; Murphy-Oikonen et al., 2020; Sexual Assault Kit Initiative [SAKI], n.d., a, b, c; Tidmarsh et al., 2020, 2021).

The goal of this type of training is to provide officers with information about the neurobiology of trauma (e.g., natural biological responses to trauma), rape myth acceptance, and investigative techniques that can reduce secondary trauma, facilitate victim well-being, and increase victim engagement with investigators (International Association of Chiefs of Police [IACP], n.d.). For example, in interviews with survivors of sexual assault, it is critical that the trauma is acknowledged, and that the victim is treated with empathy (Campbell, 2012; Maier, 2008; Lorenz et al., 2021). Additionally, VCTI strategies have been identified that allow victims

to recall details of traumatic events more accurately, such as asking about sensory experiences (e.g., sights, touch, sounds, emotional reactions, smells) during the assault (Campbell, 2012; Lonsway et al., 2020). VCTI strategies also incorporate aspects of cognitive investigative interviewing, which teaches police officers to (a) ask crime victims open-ended questions about what they can remember from the crime; (b) ask victims what they can remember about sensory details (e.g., sight, sound, smell, touch); (c) allow victims to recount the assault in a non-linear fashion and avoid interrupting their narrative; (d) ask victims to change the perspective and describe what someone would see in the room or setting of the assault; and (e) engage in active listening techniques that show empathy, patience, and care toward the crime victim (Fisher & Geiselman, 1992; Zajac et al., 2019). These strategies can help trigger victims' memories and facilitate the processing of trauma, while subsequently decreasing stress reactions and revictimization of the criminal justice process (Campbell, 2012; Lonsway et al., 2020).

Effectiveness of Police Sexual Assault Training

While sexual assault training for police responses has been offered by some jurisdictions (see B. Campbell et al., 2020, 2021; Franklin et al., 2020; Lathan et al., 2019) and some organizations (EVAWI, 2016; IACP, n.d.; SAKI, n.d. a, b, c), few jurisdictions require this type of training and fewer have empirically evaluated these programs (see B. Campbell et al., 2020; Sleath & Bull, 2017). Most existing studies have assessed the relationship between sexual assault training and officers' self-reported knowledge of trauma informed responses to sexual assault (B. Campbell et al., 2020; B. Campbell & Lapsey Jr., 2021; Franklin et al., 2020) and perceptions of sexual assault victims (B. Campbell et al., 2020; B. Campbell & Lapsey Jr., 2021; Garza & Franklin 2021), while fewer studies have examined how training has affected officer behavior in simulated interviews (Lonsway et al., 2001; Tidmarsh et al., 2021) and actual cases (Mourtgos et

al., 2021). This is problematic as police officers are often a survivors' first contact with the criminal justice system and these interactions often set the tone for the type of treatment and responses survivors of sexual assault may experience throughout the criminal justice process (B. Campbell et al., 2015; Kerstetter, 1990; Lonsway et al., 2001).

Findings from existing studies that have examined the effect of sexual assault training on police outcomes have been mixed. Much of the published research in this area has examined the effects of such training on attitudinal and/or cognitive outcomes. For example, some studies have found that officers who completed some form of sexual assault response training do not differ from officers who received no training about rape myth acceptance and perceptions of victims (Garza & Franklin, 2021; Goodman-Delahunty & Graham, 2011; Lee et al., 20012; Lonsway et al., 2001; Sleath & Bull, 2012). On the other hand, other studies have demonstrated that training can reduce officers' adherence to rape myths (B. Campbell et al., 2020; Hine & Murphy, 2019; Murphy & Hine, 2019) and improve officers' knowledge of victim trauma (B. Campbell & Lapsey Jr., 2021; Franklin et al., 2020) and victim centered interview techniques (B. Campbell et al., 2020; Rich & Seffrin, 2012). However, it is important to note that while training has been shown to be effective in some studies, very few studies have focused on officer performance, and most studies use traditional lecture-based methods of instruction. This is problematic as the broader policing literature has consistently argued that lecture-based instruction alone can be inadequate in improving police officer performance and instruction in real-world settings (Bradford & Pynes, 1999; Brand & Peak, 1995; Campbell, 2015; Ness, 1991; Olivia & Compton, 2010; Werth, 2009). Instead, practitioners and scholars have pushed for more experiential hands-on training (Bayley & Bittner, 1984; Lonsway et al., 2001; Werth, 2009).

In the police sexual assault training literature, some researchers have examined the effects of training on officer performance in simulated (Lonsway et al., 2001; Tidmarsh et al., 2021) and actual (Mourtgos et al., 2021) cases. First, Mourtgos and colleagues' (2021) evaluated the effects of a department-wide four-hour trauma informed sexual assault training program implemented in a large western U.S. police department. Their study employed a pre- and post-training design that compared victim engagement – measured by whether a survivor agreed to participate in a follow-up interview with detectives – in a sample of 77 cases reported in the six months before the training began with 55 cases reported in the six months after all officers in the department received the training. Their findings indicated that, in the post-training sample of cases, 32% more survivors engaged in an interview with a detective after their initial report.

Second, in a U.S. sample of police cadets, Lonsway et al. (2001) coupled instructional training with simulated victim interviews to assess cadets' performance in mock interviews using an experimental design. The instructional training comprised three modules that covered: (1) state sexual assault laws (60 minutes), (2) preliminary investigation techniques (90 minutes), and (3) victim response to sexual assault and interviewing techniques (60 minutes). Additionally, simulated interviews with role players were used to assess the extent to which police recruits in the control and experimental groups applied victim-centered interview techniques. These techniques included: (a) allowing the victim to dictate the pace/tone of the interview, (b) addressing victim needs/concerns, (c) showing empathy toward the victim, and (d) avoiding questions regarding victim's alcohol use. Findings indicated that cadets in the experimental group performed significantly better in the simulated interviews than control group members.

Finally, Tidmarsh et al. (2020) assessed the effects of a four-week 96-hour trauma informed interviewing class on police investigators' performance in simulated interviews among

a sample of 41 Australian police officers. Results demonstrated that, in immediate post-training interviews, investigators were more likely to use trauma-informed interviewing techniques including the use of open-ended questions while avoiding the use of interrogation and victim blaming questioning styles. However, in a nine to 12-month follow-up, the effectiveness of the training on officer performance in a second series of interviews somewhat deteriorated over time.

Taken together, these findings demonstrate training can improve policing outcomes in actual or simulated encounters with victims. Additionally, scholars who have evaluated previous sexual assault training programs have recommended that police sexual assault investigations training should incorporate simulated victim interviews to provide hands-on experiential learning (B. Campbell et al., 2020; Darwinkel et al., 2013; Lonsway et al., 2001; Tidmarsh et al., 2021).

Standardized Patient/Actor Training

Training using simulated interviews or interactions with trained actor role-players is common practice in the healthcare field. Termed standardized patient – or standardized actor – training, medical schools often train actors to depict real patients who display actual symptoms and problems (Back et al., 2007; Milone et al., 2010; Vaidya et al., 1999). This training exercise has proven successful for improving nursing and medical student performance in simulated patient encounters. Specifically, studies have demonstrated that participants in standardized patient training programs have shown more empathy when interacting with patients, were more compassionate when delivering bad news (e.g., cancer diagnoses), and provided more detailed patient care plans and options (Abraham et al., 2001; Back et al., 2007; Schlegal et al., 2011). Studies also found that standardized patient interviews improved medical professionals' ability to screen patients for a history of violence and sexual assault. For violence screening, Abraham et al.'s (2001) experimental design found that standardized patient interviews increased the

ability of physician residents to successfully screen patients for violence related injuries, and improved residents' comfort in conducting patient interviews and interpersonal skills. Related to sexual assault, Milone et al.'s (2010) repeated measures studies found that training medical students on rape myth acceptance coupled with standardized patient interviews reduced rape myth acceptance and enhanced medical student's comfort when screening for patients for a history of sexual assault.

It follows that this type of training may be effective in law enforcement settings, particularly for sexual assault investigative interviewing, which requires strong interpersonal skills and the ability to build rapport while acknowledging survivor trauma. Thus, incorporating simulated interviews with standardized actors in sexual assault training permits an opportunity to assess not only attitudinal and cognitive outcomes, but also changes in officer behavior in a controlled environment before officers re-enter the field.

Sexual Assault Investigations Training Efforts in Kentucky

Over the past 5 years, the Commonwealth of Kentucky has implemented training efforts to improve police interactions with sexual assault victims. The first came in 2017 when the Kentucky General Assembly passed Senate Bill 63 – more commonly known as the SAFE Act – which enacted large-scale reform in the criminal justice system's response to survivors of sexual assault (Kentucky SAFE Act of 2017). One of these reforms mandated that the KYDOCJT create a 40-hour Sexual Assault Investigations training curriculum for law enforcement officers. Additionally, the SAFE Act required that by 2019, at least one officer in every Kentucky law enforcement agency attend the 40-hour training program.¹ The KYDOCJT Sexual Assault

¹ Specifically, the SAFE act required that agencies with fewer than five officers send at least one officer to the training, agencies with five to 29 officers send at least two officers, and agencies with 30 or more officers send at least four officers to the training.

Investigations course is comprehensive and is designed to cover several topics including Kentucky sexual assault laws, common misconceptions about sexual assault victims (e.g., rape myth adherence), victim-centered responses to survivors of sexual assault (e.g., victim interviewing, neurobiology of trauma, sexual assault response teams), investigative strategy, the role of forensic evidence in investigations, and sexual assault investigative policies. The training program was delivered by a former sex crimes investigator with more than 13 years of experience investigating sexual assault cases. The course was lecture-based, however in-class discussion and homework assignments were included to facilitate retention of course material and enhance officers' knowledge of trauma informed investigative techniques. A full listing of the course topics and time allocated to each topic is displayed in APPENDIX A.

Because this training program was new, the KYDOJT partnered with the lead author of this report to add an evaluation component that assessed the training course's short- and long-term effectiveness on attitudinal and cognitive outcomes (See B. Campbell et al., 2020 and B. Campbell & Lapsey Jr., 2021). To complete the evaluation, Campbell and Lapsey Jr. designed a randomized experimental survey evaluation to assess the short- and long-term effects of the KYDOJT training on three outcome variables: (1) rape myth acceptance (Illinois Rape Myth Acceptance – Short Form [IRMA-SF]), (2) Kentucky sexual assault laws, and (3) knowledge of trauma informed practices. Results from this evaluation were promising and indicated that the training reduced officers' acceptance of rape myths and improved knowledge of laws and trauma informed responses in both the short- and long-term analyses (B. Campbell et al., 2020 and B. Campbell & Lapsey Jr., 2021).

Another portion of this study asked police participants to select three top choices from a list of 20 possible topics for additional future training programs. *Results from this portion of the*

evaluation indicated that the second highest ranked category for more training was victim interviewing (see Table 1). Based on this information, the PI on this project met with the KYDOCJT and KASAP to discuss future training opportunities. Based on these discussions, the groups agreed to develop and provide a new 40-hour training program on victim centered, trauma informed (VCTI) interviewing techniques. Additionally, the team decided to include mock interviews with standardized actors to permit an evaluation of officers' performance pre- and post-training, as well as provide an opportunity for police participants to practice their VCTI skills before entering the field. Accordingly, the UofL Criminal Justice and Theatre Arts teams partnered with KYDOCJT and KASAP to create the training program, develop standardized actor scripts, train actors to follow the script, and design a randomized experiment to evaluate the impact of this new training program on officers' cognitive, attitudinal, and behavioral outcomes. The team then applied for funding from the National Institute of Justice in 2018 and were awarded funding to begin developing and delivering the VCTI interview training in 2019. The following sections describe these efforts and present findings from the experimental evaluation.

Table 1. KYDOCJT training participants' requests for continued training

Variables	N	% ^a
Topics		
1. Interviewing perpetrators	155	50.0
2. Interviewing victims	127	41.0
3. Crime scene investigation/forensic evidence	125	40.3
4. Report writing/case presentation	77	24.8
5. Investigating cold cases	76	24.5
6. Defeating consent defenses	74	24.2
7. Sexual assault laws	57	18.4
8. Preventing sexual violence	43	13.9
9. Alcohol/drug facilitated sexual assault	41	13.2
10. Dynamics of sexual assault	33	10.7
11. Multidisciplinary/coordinated response to SA	25	8.0
12. Medical/forensic examination of victims	24	7.7
13. Trauma informed response to victims	22	7.1
14. Medical/forensic examination of perpetrators	17	5.5
15. Non-stranger sexual assault	13	4.2
16. Intimate partner/marital sexual assault	11	3.6
17. Data/incidence of sexual assault	8	2.6

^a Note that percentages are not mutually exclusive as respondents selected a total of three topics. These percentages reflect the percentage of respondents that rated each topic in their top three requests for more training.

Current Study

Experimental Evaluation of a 40-Hour VCTI Training on Officers' Attitudinal, Cognitive and Behavioral Outcomes

The current study builds on the police sexual assault training literature by using a randomized experimental design to evaluate VCTI training on police officers' cognitive, attitudinal, and behavioral outcomes in a U.S. sample of police officers. The VCTI training comprised a 1-week 40-hour course. The course content was developed using publicly available research and training resources (see EVAWI, 2916; IACP, n.d.; SAKI, n.d. a, b, c), as well as the expertise of a certified KYDOCJT instructor with more than 13 years of sexual assault investigative experience. Additionally, some portions of the course were supplemented with research overviews provided by the PI on this project. A full schedule of the course topics, course objectives, and references used to develop each section is included in APPENDIX B. A total of eight training courses were completed between November 2019 and August of 2021 (see Table 2). The trainings were held in various locations throughout Kentucky to maximize accessibility for all law enforcement agencies.

Table 2. Training Schedule and Randomized Assignment (Updated due to COVID-19)

2019	Condition Assignment	Location	Simulation Date
1. November 11-15	Treatment	Richmond	November 14
2. December 9-13	Treatment	Louisville	December 12
2020			
1. January 13-17	Treatment	Richmond	January 16
2. March 16-20¹	Control	Northern KY	March 16
3. March 30-April 3	Treatment	Pikeville	April 2
4. May 18-22	Control	Northern KY	May 18
5. June 15-19	Control	Bowling Green	June 15
6. September 28-Oct 2	Control	Louisville	September 28
2021			
1. March 22-26	Control	Boone County	March 22/25
2. April 26-30	Control	Louisville	April 26/29
3. May 17-21	Control	Bowling Green	May 17/20
4. July 19-23	Control	Richmond	July 19/22
5. August 23-27	Treatment	Pikeville	August 26

Table 3 displays the schedule of survey and interview assessments used in this study. All study participants were asked to complete a pre-training paper and pencil survey on the first day of training after a brief 1-hour introduction to the course. Participants were also asked to complete a post-training paper and pencil survey on the final day of the training course. Finally, all course participants were emailed a long-term follow-up survey at least six months after completing the training program. APPENDIX C lists all items included in the survey. These items were used to assess the impact of the VCTI training on officers' (a) self-reported knowledge of the neurobiology of trauma via survey items asking about their perceptions of sexual assault victim behaviors (Ask, 2010 *PVB*; 9-item 6-point Likert scale), (b) rape myth acceptance (Payne et al., 1999 *IRMA-SF*; 17-item 6-point Likert scale), and (c) comfort with interviewing sexual assault victims (modified items from Blok et al., 2004 and Schlegel et al., 2012 and *CWI*; two 7-item 6-point Likert scale). Control items in the study included officers' demographics, previous training, and experience with sexual assault investigations. Training

participants completed self-report measures for each scale during pre-training, post-training, and long-term follow up stages.²

Table 3. Schedule of survey and interview assessments

Assessment	Pre-intervention	Post-intervention	Long-term follow-up
Personal Characteristics and Traits			
1. Demographics			
Control	X		
Treatment	X		
2. Training and Experience with Sexual Assault			
Control	X		
Treatment	X		
Knowledge and Perceptions about Victims and Sexual Assault			
3. Perceptions of Victim Behaviors (Ask 2009)			
Control	X	X	X
Treatment	X	X	X
4. IRMA-SF (Lonsway 1999)			
Control	X	X	X
Treatment	X	X	X
5. Comfort with Interviewing Survivors (Schlegel et al., 2012 & Blok et al., 2004)			
Control	X	X	X
Treatment	X	X	X
Simulated Interview Performance			
6. Standardized Actor Interview			
Control	X	X	
Treatment		X	
7. Qualitative Data¹			
Post-training interviews (n = 5)		X	
Follow up survey question (n = 12)		X	

¹Scheduling qualitative interviews proved difficult due to the COVID-19 pandemic and shortages in law enforcement personnel throughout Kentucky. Thus, after contacting more than 20 study participants, five course participants agreed to participate in follow up interviews.

² All paper and pencil survey data were double entered to ensure data reliability. The PI of the project first entered the data, then two research assistants each entered the data to detect errors. Once errors were detected, the research team went back to the original surveys and made the appropriate corrections.

Additionally in this study, each participant conducted at least one interview with a standardized actor trained to portray a survivor reporting a sexual assault to police. Based on prior vignette studies (e.g., Spohn & Horney, 1992) and several discussions with police investigators, victim advocates, and sexual assault survivors, the research team created three scripts representing a scenario in which a female survivor of sexual assault demonstrated elements of trauma while reporting to a police investigator. The vignettes are listed in APPENDIX D and an example of a standardized actor script is displayed in APPENDIX E. The scripts were used as a guide to train the actors for the simulated interview. As noted in the script, the actors were trained extensively to provide varying levels of information relevant to the case, and to change physical and emotional responses to questioning based on the extent officers used VCTI techniques in the simulated interviews. All officer participants were instructed by the training team to not discuss their actions in the simulated interview or the details of the case with anyone to prevent the sharing of information between learners. Interviews were audio and video recorded and study participants' use of VCTI techniques in interviews with standardized actors were assessed using a coding scheme adapted from two sources:

- (1) Lonsway and colleagues' (2001) two studies of police cadet performance in simulated interviews with sexual assault victims (5-point Likert scales), and
- (2) Back and colleagues' (2007) study of physician trainees' communication skills while giving cancer diagnoses to standardized patients (16-item, dichotomous codes).

The research team used Lonsway et al.'s and Back et al.'s work as a guide to create thematic codes that measured officer performance in simulated interviews. The team also added codes based on trauma informed interviewing guides provided by EVAWI, IACP, and SAKI. Using these methods, this study sought to answer the following research questions:

RQ1a: Does VCTI training improve police officers' knowledge of sexual assault trauma and victim behaviors as measured by the Ask (2009) Perceptions of Victim Behaviors (PVB) scale?

RQ1b: If VCTI training does initially improve police officers' knowledge of trauma and victim behaviors, are the improvements maintained in the follow up survey?

RQ2a: Does VCTI training reduce rape myth acceptance as measured by the Illinois Rape Myth Acceptance Scale Short Form (IRMA-SF) scale?

RQ2b: If VCTI training does reduce rape myth acceptance, do these reductions remain stable in the follow up survey?

RQ3a: Does VCTI training improve police officers' comfort with interviewing survivors as measured by the CWI knowledge and the CWI confidence with interviewing (CWI) scale?

RQ3b: If VCTI training improve police officers' confidence with interviewing (CWI knowledge and CWI confidence) scores, are these improvements maintained in the follow up survey?

RQ4: Does VCTI training improve police officers' performance in interviews with standardized patients portraying survivors of sexual assault?

Study Design

Participants. As discussed previously, Campbell and colleagues' (2020, 2021) study of Kentucky's statewide sexual assault investigator course identified a desire among police officers to obtain additional training on VCTI interviewing techniques. Using this information, the PI met with KYDOCJT administrators to discuss future training designed to meet this request. From this discussion, KYDOCJT agreed to provide eight five-day 40-hour VCTI training classes as a

special topics course option for investigators' state mandated yearly in-service training. Participants in the KYDOCJT VCTI course were recruited by advertising the training program through the KYDOCJT website and at meetings held by the Kentucky Sexual Assault Response Team Advisory Committee (SART-AC) and the Kentucky Sexual Assault Kit Initiative Task Force (KySAKI Task Force). On average, 14.13 officers attended each course producing a sample of 113 officers who completed the training. Of these 113 officers, completed surveys were available from 95 training participants producing a survey response rate of 84.07%. Additionally, audio and/or video recordings of officer interviews were available for 88 of the 113 course participants, producing a simulated interview response rate of 77.88%.³ Based on a priori statistical power analyses, both the survey data and the simulated interview data sample sizes are large enough to detect a small effect size for all dependent variables.

Using a randomized controlled design, the eight VCTI course were randomly assigned to treatment and control groups. Participants in four courses were randomly assigned to a treatment group, and participants in four courses were assigned to the control group. Assignment of courses to treatment and control groups was completed using www.randomization.com, an advanced web-based randomization tool often used in clinical trials by medical researchers (see Saghaei, 2004; Suresh, 2011). This study design permitted us to conduct pre- and post- training survey assessments of officers' attitudinal and cognitive outcomes, while also providing a unique opportunity assess officers' behavior through both within-subjects and between-subjects comparisons of officer performance in mock interviews (Shadish et al., 2002). Specifically, the treatment group completed simulated interviews with a standardized actor on day 4 of the

³ Though both audio recorders and GoPro Hero 5 cameras were used to record each interview, in some cases the recording equipment failed to capture the full interview (n=11), and/or participants did not complete either the interview portion or the survey portion of the data collection (n= 14).

training, while the control group completed a mock interview with a standardized actor on day 1 of the course before receiving any trauma informed interview training. Control group members also completed a second interview with a different standardized actor and different case details on day 4 of the training.

Experimental Group (Simulated Interview Post-VCTI Training). The experimental group participated in a standardized actor interview on day 4 of the VCTI interview training after receiving 31-hours of instruction on trauma informed response to sexual assault and VCTI interview techniques. Based on this design, the experimental group participants arrived at the training facility on day 4 of the training, were assigned an interview time, and each officer completed an interview with a standardized actor. The interviews were conducted in private rooms and were video/audio recorded. Each officer was instructed to read a brief report about the case, enter the room and begin interviewing the actor. Due to time constraints, course participants were instructed that interviews could last up to 45 minutes. On average, interviews conducted by members of the control group lasted 28.29 minutes and interviews conducted by the treatment group members lasted 28.77 minutes.

Control Group (Simulated Interview Pre-VCTI Training and Post-VCTI training). Participants in the control group condition participated in a simulated interview with a standardized actor on day 1 of the course before receiving any trauma informed interview training. Following this model, control group participants arrived at the training facilities, and after a brief introduction to the course, they engaged in a simulated interview with standardized patient actors. The control group's training topics, instruction methods, and assignments were identical to the experimental group (See APPENDIX B, schedule for control group). However, on day 4 of the training, control group participants also completed a post-VCTI training

interview with a different actor who followed a script containing different case details. Using this design, we were able to conduct between-subjects assessments by comparing the control group's pre-training interviews with the treatment group's post-training interviews. We were also able to conduct within-subjects assessments by comparing the control group's day 1 interviews with their day 4 interviews.

Using this randomized experimental design, we tested the following four hypotheses:

Hypothesis 1a: the KYDOCJT VCTI training will improve police officers' perceptions of sexual assault victim behaviors as measured by the Ask (2009) Perceptions of Victim Behaviors (PVB) scale.

Hypothesis 1b: post-training PVB scores will be sustained over time.

Hypothesis 2a: the KYDOCJT VCTI training will reduce rape myth acceptance as measured by the Illinois Rape Myth Acceptance Scale Short Form (IRMA-SF) scale.

Hypothesis 2b: post-training IRMA-SF scores will be sustained over time.

Hypothesis 3a: the KYDOCJT VCTI training will improve police officers' knowledge of and comfort with VCTI interview techniques as measured by the confidence with interviewing (CWI knowledge and CWI confidence) scale.

Hypothesis 3b: post-training officer CWI knowledge and CWI confidence scores will be sustained over time.

Hypothesis 4: The VCTI training will improve police officers' performance in interviews with standardized actors portraying survivors of sexual assault.

Data Collection and Measurement

Table 3 provides the schedule of assessments and APPENDIX C lists all survey items for each assessment. After the one-hour introduction to the VCTI interview course on the first day of

each training course, participants in both the treatment and control groups completed pre-training assessment surveys that included measures on: (1) demographics, (2) training and experience with sexual assault, (3) perceptions of victim behavior (PVB), (4) rape myth acceptance (IRMA-SF), and (5) comfort with interviewing sexual assault survivors (CWI knowledge and CWI confidence). Immediately after completing the 40-hour VCTI course, participants again completed assessments 3 (PVB), 4 (IRMA-SF), and 5 (CWI knowledge and CWI confidence). Post-training surveys also included four additional items measuring officers' perceptions of the simulated interviews with standardized actors. Finally, to assess long-term effectiveness of the training, assessments 3 (PVB), 4 (IRMA-SF), and 5 (CWI) were repeated during the follow up period.

Demographic Control Variables and Training and Experience

This study aimed to enhance external validity to determine whether VCTI interview training was effective at improving law enforcement officers' attitudinal, cognitive, and behavioral outcomes. Thus, we included several control variables regarding participants' demographics, experiences in law enforcement, previous training in sexual assault investigations, and experience investigating sexual assault cases (see B. Campbell et al., 2020 and Franklin et al., 2020). These control variables were important to ensure that the experimental and control groups were similar. All control variables are listed in APPENDIX C. Descriptive statistics for all control variables are listed in Table 4.

Survey Data Dependent Variables: Attitudinal and Cognitive Outcomes

Perceptions of Victim Behaviors (PVB). Ask (2010) developed and tested the *Perceptions of Victim Behaviors* (PVB) scale, aimed at assessing practitioners' self-reported knowledge about trauma displayed by crime victims (Ask, 2010; Franklin et al., 2020). The PVB

comprises nine Likert scale items that asked training participants to indicate their level of agreement with statements describing survivors' emotional responses and ability to recall details of a crime when reporting victimization. (B. Campbell & Lapsey Jr., 2021; Franklin et al., 2020). APPENDIX C lists the nine PVB items. Previous research using the PVB has shown acceptable internal consistency with alphas ranging from 0.83 (B. Campbell et al., 2021) to 0.86 (Franklin et al., 2020). Factor analysis of the PVB produced a single factor solution that retained seven items and exhibited acceptable internal reliability⁴ ($\alpha = 0.89$; Eigenvalue = 4.30; Variance = 47.82%) (see APPENDIX F for a list of survey items and factor loadings). We averaged participants' responses to these seven PVB survey items to create a mean PVB score. Lower PVB scores indicate more knowledge.

Illinois Rape Myth Acceptance Scale Short Form (IRMA-SF). The *Illinois Rape Myth Acceptance-Short Form (IRMA-SF)* scale was used to measure training participants' adherence to common misconceptions regarding sexual assault victims. Developed by Payne and colleagues (1999), the IRMA-SF is a 20-item scale comprising 17 Likert scale measures and three filler items that are not used to calculate overall rape myth acceptance scores. The IRMA-SF is intended to provide a single factor measure of overall rape myth acceptance and has demonstrated strong internal reliability with alphas reported in previous studies ranging from 0.83 (B. Campbell et al., 2020) to 0.87 (Lonsway et al., 2001). For this study, we used an average of participants' responses to the 17 IRMA-SF items to measure officers' self-reported agreement with rape myths. Factor analysis of the IRMA-SF items produced a single factor with acceptable internal consistency ($\alpha = 0.89$; Eigenvalue = 7.80; Variance = 45.90%) (APPENDIX

⁴ To determine the acceptability of Cronbach's alpha in this study, we used recommended reliability thresholds proposed by Ursachi and colleagues (2015) and Taber (2018).

F). In this study, lower average IRMA-SF scores represent less agreement with common rape myths.

Comfort with Interviewing Victims (CWI). Following previous research examining the efficacy of standardized actor training programs among a sample of nursing students (see Schlegel et al., 2012), we modified two self-efficacy scales to measure officers' comfort with interviewing sexual assault victims. As prior research has indicated, measuring self-efficacy is important to understand how comfortable training participants are in completing work-related tasks (Blok et al., 2004; Schlegel et al., 2012). Thus, we adapted Schlegel and colleagues (2012) two six-item scales. The two scales measure both officers' self-reported knowledge of trauma informed interviewing techniques (CWI knowledge) and their confidence in their ability to complete each technique in victim interviews (CWI Confidence). The knowledge and confidence scale items are listed in APPENDIX F. Factor analysis of the CWI knowledge scale produced a single factor with acceptable consistency ($\alpha = 0.95$; Eigenvalue = 5.52; Variance = 78.86%). The CWI Confidence scale also produced a single factor with acceptable internal consistency ($\alpha = 0.94$; Eigenvalue = 5.11; Variance = 72.94%). For both CWI scales, higher scores indicate greater levels of knowledge or confidence.

Simulated Interview Dependent Variables: Officer Interview Performance

To assess participants' behavior, simulated interviews with standardized patient actors were audio and video recorded. Before the training courses began, a team of actors were hired from the University of Louisville's Theatre Arts Department. The actors were trained extensively on victim responses to sexual assault including the neurobiology of trauma. Additionally, the research team trained the actors extensively on the standardized patient actor script (see APPENDIX E). At least two members of the research team viewed – or listened to – each

simulated interview and developed codes to serve as performance metrics based on previous literature (see Back et al., 2007; Lonsway et al., 2001). Specifically, participants' use of VCTI interviewing techniques was assessed through a multi-coder, multi-stage coding process (Berge & Lune, 2012; Campbell et al., 2015). First, three members of the research team viewed a sample of five videos to develop an initial set of codes based on VCTI techniques, prior police sexual assault training research (Lonsway et al., 2001) and previous standardized actor simulation training research (Back et al., 2007). Using these sources, initial codes were developed and applied to the sample of videos. The researchers then coded each video, compared findings, and adapted the coding scheme to effectively evaluate each officers' use of the VCTI techniques covered by the training course. Once the coding scheme (see APPENDIX G for a list of codes) was complete, at least two researchers coded each video. Codes were compared for consistency and when a discrepancy arose a third researcher reviewed the video/audio recording and resolved the discrepancy. This process produced an inter-rater reliability of 91.9%.

The coding scheme comprised four parts containing ordinally ranked items based on the recommended structure of VCTI interviews (see resources from EVAWI, IACP, SAKI, R. Campbell, 2012, and APPENDIX B), officers' ability to establish the elements of the crime (see Lonsway et al., 2001), and the use of VCTI and cognitive interviewing techniques (see resources from EVAWI, IACP, SAKI, and Geiselman & Fischer, 2014; Zajac et al., 2019). Each ordinally ranked item assessed the officers' performance ranging from 4 = very good (investigators asked questions/obtained information using VCTI interviewing techniques) to 1 = very poor (investigator asked questions/obtained information using traditional interrogation style investigative techniques). Based on this coding scheme, four scales were created to measure

officers' performance in the simulated interviews. Factor analyses for each scale and the items included are listed in APPENDIX H.

Investigator Rapport Building (IRB). A portion of the training discussed several trauma informed practices and interviewing techniques that can build rapport at the beginning of an interview with sexual assault victims. For example, investigators were instructed to show empathy toward the victim, acknowledge the trauma experienced by the victim, explain the interview process, assure the victim the case was a priority, let the victim control the pace of the interview, and ask the victim about their well-being or if they needed anything before the start of the interview. Factor analysis of the seven IRB items produced a single factor that retained six items and indicated acceptable internal consistency ($\alpha = 0.53$; Eigenvalue = 2.166; Variance = 30.94%) (see APPENDIX H). Higher scores on the IRB scale indicated better performance.

Elements of the Offense (EOO). Following Lonsway and colleagues' (2001) study, we also sought to measure study participants' ability to obtain relevant case information from the mock victims during simulated interviews. Accordingly, the research team created ten items that evaluated the officers' ability to obtain information from the mock victim regarding items such as the suspect's name, the location and timeline of the incident, victim's lack of consent, and the offender's use of force. Factor analysis of the ten EOO items revealed a single factor retaining eight items and indicated acceptable internal consistency $\alpha = 0.82$; Eigenvalue = 4.013; Variance = 40.133%) (see APPENDIX H). Higher scores on the EOO scale indicated better performance.

Use of VCTI Interview Techniques (UVCTI). The KYDOCJT VCTI training course instructed participants about several trauma informed responses to sexual assault as well as cognitive interviewing techniques designed to enhance victim recall and promote rapport. Eight items were created to measure the effectiveness of these training modules including items such

as the investigator avoided interrupting the victim, the investigator asked open-ended questions (e.g., what can you remember about your experience?), the investigator asked about sensory details (e.g., sights, sounds, smells), and the investigator demonstrated active listening techniques. A factor analysis of the UVCTI items produced a single factor retaining seven items and internal reliability was acceptable ($\alpha = 0.71$; Eigenvalue = 2.85; Variance = 35.66%) (see APPENDIX H). Higher UVCTI scores indicate more usage of VCTI techniques.

Ending the Interview (EI). Finally, we also examined the effectiveness of the VCTI training on officers' performance during the end of the interview. Another portion of the training discussed how officers can transition out of victim interviews in a trauma informed manner. Specifically, the training taught officers to ask the victim if they had missed anything they wished to share, to provide information on victim services, to thank the victim for reporting, and explain the next steps of the investigative process. Thus, we created eight items to measure officers' ability to conclude the interview. Factor analysis revealed a single factor solution retaining all eight items and exhibited acceptable internal consistency ($\alpha = 0.644$; Eigenvalue = 2.376; Variance = 29.70%) (see APPENDIX H).

Results: Survey Data

Effects of VCTI Training on Officers' Attitudinal and Cognitive Outcomes

Analytic Strategy: Survey Data

To test Hypotheses 1, 2, and 3, our analyses of the survey data proceeded in five steps. First, we present descriptive statistics for our sample. Second, we performed balance tests to determine how effective our randomization technique was at producing balanced control and experimental groups that did not differ based on baseline characteristics. Specifically, t-tests were conducted to compare the control and treatment groups based on demographics, training, and experience measures to detect any significant differences between groups. Third, we tested the immediate effects of the training on officers' perceptions of victim behaviors (PVB), Illinois rape myth acceptance short form (IRMA-SF), and confidence with interviewing (CWI knowledge and CWI confidence) scores using t-tests to assess both within-subjects and between-subjects comparisons. Within-subjects comparisons were conducted using paired samples t-tests to assess differences in study participants' pre-training and post-training assessments. Between-subjects comparisons were conducted using independent samples t-tests to compare the control group's pre-training scores with the treatment group's post-training scores. Fourth, we also estimated OLS models to compare the control groups' pre-training scores with the treatment groups' post-training scores while controlling for demographic variables. The OLS models assess the effects of the VCTI training on PVB, IRMA-SF, CWI, and officers' interview performance while controlling for demographics, prior training, and investigative experience. In these OLS models, the key independent variable is training (no training = 0; training = 1), measured by whether the participant had completed the VCTI training yet. Finally, we used t-

tests to examine the long-term effects of training on officers' PVB, IRMA-SF, and CWI scores using data collected from follow up assessments.

Survey Data: Descriptive Statistics

Descriptive statistics are displayed in Table 4. The sample of officers included 113 training participants, 95 (84.07%) officers completed surveys, and 18 officers either did not hand in a survey or turned in an incomplete survey. Most officers in the training program had some previous sexual assault investigations training (n = 58, 61.1%), and had responded to at least one sexual assault report in the previous 12 months (n = 64, 67.4%). Additionally, 82% of officers were male and 92% of the sample identified as White. The average age of study participants was 41.1, and the mean number of years working in law enforcement was 15.25. Finally, 57 (60.0%) of the officers in the sample held at least a 2-year college degree.

Table 4. Descriptive statistics for treatment group, control group, and full sample (N=95)

Variables	Control group n = 48 n(%)	Treatment group n = 47 n(%)	Full sample N = 95 n(%)
Prior sexual assault training	26 (54.2)	32 (68.1)	58 (61.1)
Age (\bar{x})	41.3	41.4	41.4
Male (\bar{x})	.88	.77	.82
White officer (\bar{x})	.88	.96	.92
Education			
High school	22 (45.8)	16 (34.0)	38 (40.0)
Two-year degree	7 (14.6)	12 (25.5)	19 (20.0)
Four-year degree	17 (35.4)	15 (31.9)	32 (33.7)
Graduate degree	2 (4.2)	4 (8.5)	6 (6.3)
Years police (\bar{x})	15.4	15.5	15.5
Sexual assault reports in last year			
0	18 (37.5)	13 (27.7)	31 (32.6)
1 to 5	18 (37.5)	18 (38.3)	36 (37.9)
6 to 10	7 (14.6)	4 (8.5)	11 (11.6)
11 to 20	2 (4.2)	5 (10.6)	7 (7.4)
21 or more	3 (6.3)	7 (14.9)	10 (10.5)

Note: \bar{x} indicates number displayed is an average.

Survey Data: Balance Tests

We conducted balance tests to assess how effective our randomization of courses was at producing balanced treatment and control groups that do not differ significantly based on important demographic and policing variables. Prior research has found that officers' gender, age, years in policing, education, prior training, and prior experience responding to sexual assault cases can impact officer knowledge and perceptions about sexual assault survivors (see B. Campbell et al., 2020, 2021; Sleath & Bull, 2017). As such, we completed a series of balance tests to examine how comparable our groups are based on the following variables: any prior sexual assault investigation training (no = 0, yes = 1), age (in years), gender (female = 0, male = 1), race (non-White = 0, White non-Hispanic = 1), education level (high school = 1, two-year degree = 2, four year degree = 3, graduate degree = 4), years working as a police officer (in years), and number of sexual assault reports investigated in the past year (none = 1; 1 to 5 = 2; 6 to 10 = 3; 11 to 20 = 4; 21 or more = 5).

Our analyses did not detect significant differences between the treatment and control groups based on prior sexual assault investigations training ($t(93) = -1.390, p = .168$), age ($t(93) = -.012, p = .990$), gender ($t(93) = 1.336, p = .169$), race ($t(93) = 1.426, p = .157$), education level ($t(93) = -.828, p = .410$), years working as a police officer ($t(93) = -.068, p = .946$), or number of sexual assault reports responded to in the past year ($t(93) = -1.638, p = .105$). These results demonstrate that our randomization technique was effective, and our groups are

comparable. However, to be sure our findings are robust, except for our participant age variable,⁵ each demographic, training, and experience variable were included in our multivariable OLS models to control for small differences that might affect the relationship between the VCTI training and our outcome variables.

Immediate Effects of the VCTI Training on Survey Outcomes

To assess the effects of the VCTI interview training on the outcome variables, we conducted t-tests to assess both within- and between-subjects differences. We also estimated four OLS models that controlled for demographic variables to assess the multivariable relationship between training and our outcome variables. The analyses of the immediate training effects are listed below in order of our hypotheses.

Hypothesis 1a: Perceptions of Victim Behaviors (PVB). When assessing the effect of the VCTI interview training on officers' PVB scores, our within-subjects paired samples t-test revealed a significant decrease between the pre-training PVB ($M = 2.565$, $SD = 0.988$) and post-training PVB ($M = 1.968$, $SD = 0.815$) scores ($(t(93) = 7.328, p < .001)$). Similarly, our between-subjects independent samples t-test comparing the control group's pre-training scores with the treatment group's post-training scores also produced a significant difference between the control ($M = 2.807$, $SD = 0.990$) and treatment ($M = 1.909$, $SD = 0.814$) groups ($(t(93) = 4.822, p < .001)$). Finally, the results of our OLS model that examined the impact of the VCTI training on PVB scores while controlling for demographic variables is displayed in Table 5. Consistent with Hypothesis 1a, the VCTI training significantly increased participants'

⁵ Multicollinearity diagnostics found intercorrelation between officer age and years in policing. Because prior research has found that experience in policing is correlated with less victim blame among officers (see Rich and Seffrin 2012), we retained years in policing and excluded officer age in our multivariate analyses.

knowledge of trauma ($b = -.803, p < .001, r = -.447$),⁶ while none of the control variables exerted a significant effect in Model 1. These findings mean that Hypothesis 1a was supported, and training had a large effect on officers' knowledge of victim trauma and reporting behaviors.

Hypothesis 2a: Rape Myth Acceptance (IRMA-SF). To test Hypothesis 2a, we examined the relationship between VCTI training and officers' adherence to rape myths (IRMA-SF) scores. The within-subjects comparison detected a significant reduction in rape myth acceptance when comparing officers' pre-training IRMA-SF ($M = 1.347, SD = 0.457$) and post-training IRMA-SF ($M = 1.264, SD = 0.394$) scores ($(t(93) = 2.977, p = .004)$). Conversely, the between-subjects comparison did not detect a significant difference between the control group's pre-training IRMA-SF ($M = 1.380, SD = 0.478$) and the treatment group's post-training IRMA-SF ($M = 1.290, SD = 0.404$) scores ($(t(93) = .985, p = .327)$). Though the between subjects t-test was not significant, we estimated a second OLS model (Table 5) to test Hypothesis 2a while controlling for demographic, training, and experience variables. In OLS Model 2, results revealed that female officers held fewer rape myths ($b = .301, p = .027, r = .308$), however Hypothesis 2a was not supported as the training variable did not exert a significant effect on IRMA-SF scores ($b = -.043, p = .645, r = -.102$). The lack of an effect of training on IRMA-SF scores could be due to the relatively low IRMA-SF scores in the pre-training survey data.

⁶ We used Pearson's r correlations as effect sizes. Based on Gignac and Szodorai's (2016) recommendations for interpreting the magnitude of r , .10 is a small effect, .20 is a medium effect, and .30 is a large effect.

Table 5. OLS treatment group post-test vs. control group pre-test on PVB and IRMA-SF

<i>Model 1 Perceptions of victim behavior (PVB)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	-.803	.186	<.001	-.447
Any prior SA training	-.207	.199	.301	-.228
Gender	.327	.269	.229	.313
White officers	-.151	.167	.368	-.091
Education	-.180	.096	.066	-.284
Years in policing	.003	.009	.707	.025
Sexual assault reports in last year	-.060	.077	.439	-.236
Constant	3.182			
<i>F</i>	5.795			
Adjusted R ²	.263			
<i>Model 2 IRMA-SF</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	-.043	.093	.645	-.102
Any prior SA training	-.010	.099	.920	-.083
Gender	.301	.134	.027	.308
White officers	.007	.083	.937	-.053
Education	-.037	.048	.439	-.186
Years in policing	.004	.004	.346	.106
Sexual assault reports in last year	-.019	.038	.614	-.153
Constant	1.133			
<i>F</i>	1.679			
Adjusted R ²	.048			

Note: Entries include unstandardized coefficients (*b*), standard errors (SE), *p*-value (*p*), and Pearson correlation (*r*).

Hypothesis 3a: Comfort with Interviewing – Knowledge (CWI knowledge). When assessing the impact of training on participants confidence in their knowledge of trauma informed practices, the within-subjects t-test revealed a significant improvement in officers’ post-training CWI knowledge scores (M = 5.349, SD = 0.729) compared to pre-training scores (M = 4.140, SD = 1.092) ($t(93) = -13.562, p < .001$). As for the between-subjects comparison, our independent samples t-test detected a significantly higher average CWI knowledge score in the treatment group (M = 5.383, SD = 0.775) when compared to the control group (M = 4.042,

SD = 1.003) scores ($t(93) = -7.285, p < .001$). Findings from OLS Model 3 that included control variables, indicated that training ($b = 1.150, p < .001, r = .603$) had a significant and large effect on CWI knowledge scores (Table 6). In this model, one control variable was significantly related to CWI knowledge scores. The number of sexual assault cases investigated in the last year ($b = .188, p = .013, r = .354$) was correlated with an increase in officers self-reported knowledge of trauma informed interviewing. Findings from the CWI knowledge OLS model support Hypothesis 3a and the VCTI training variable in this model had the largest effect size.

Hypothesis 3a: Comfort with Interviewing Confidence (CWI – confidence).

Additionally for Hypothesis 3a, we tested the effects of training on officers' self-reported confidence in their confidence in their ability to perform VCTI tasks. In the within-subjects paired samples analysis, t-test results indicated a significant improvement in officers' confidence ($t(93) = -12.561, p < .001$) from the pre-training assessment (M = 4.337, SD = 1.022) to the post-training assessment (M = 5.370, SD = 0.727). Additionally, the between subjects t-test also produced a significant improvement in CWI confidence scores ($t(93) = -6.876, p < .001$) between the control group's pre-training (M = 4.244, SD = .876) and the treatment group's post-training (M = 5.413, SD = 0.778) assessments. Finally, in OLS Model 4, findings indicated that training exerted a significant effect on CWI confidence scores ($b = .986, p < .001, r = .581$) (Table 6). This means that Hypothesis 3a was supported, and training had a large effect on officers' self-reported confidence. Two control variables were also correlated with officers' confidence. Specifically, prior sexual assault training ($b = .369, p = .039, r = .331$), and the number of sexual assault reports officers responded to in the last year ($b = .159, p = .022, r = .350$) were correlated with significant increases in CWI confidence scores.

Table 6. OLS treatment group post-test vs. control group pre-test on CWI scales

<i>Model 3 Comfort with interviewing – knowledge (CWI knowledge)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	1.150	.180	<.001	.603
Any prior SA training	.371	.192	.057	.318
Gender	-.211	.260	.419	-.282
White officer	-.104	.161	.521	-.053
Education	.110	.093	.239	.194
Years in policing	.001	.009	.900	.006
Sexual assault reports in last year	.188	.074	.013	.354
Constant	3.719			
<i>F</i>	11.568			
Adjusted R ²	.440			
<i>Model 4 Comfort with interviewing – confidence (CWI confidence)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	.986	.165	<.001	.581
Any prior SA training	.369	.176	.039	.331
Gender	-.268	.238	.265	-.308
White officers	-.105	.147	.478	-.053
Education	.103	.085	.229	.205
Years in policing	-.002	.008	.785	-.021
Sexual assault reports in last year	.159	.068	.022	.350
Constant	4.068			
<i>F</i>	11.007			
Adjusted R ²	.427			

Note: Entries include unstandardized coefficients (*b*), standard errors (SE), *p*-value (*p*), and Pearson correlation (*r*).

In sum, Hypothesis 2a was not supported as the between-subjects comparison and the OLS model did not detect a significant relationship between training and IRMA-SF scores. However, the analyses of the immediate pre- and post-training effects supported Hypotheses 1a, and 3a, which predicted that the KYDOCJT VCTI training program would (a) improve officers' knowledge of victim reporting behaviors (PVB), (b) increase officers' knowledge of VCTI interview techniques (CWI knowledge), and (c) increase officers' confidence with using VCTI interview techniques (CWI confidence). Additionally, in OLS models 1, 3, and 4, the VCTI

training variable produced the largest effect sizes, indicating that the training program had a significant and substantial effect on three of the outcome variables.

Long-term Effects of the VCTI Training on Survey Outcomes

While the training was effective at improving short-term outcomes for officers' immediate post-training PVB, CWI knowledge, and CWI confidence scores, we also sought to assess the long-term effects of the VCTI training on our survey outcome variables. To meet this goal, the KYDOCJT emailed follow up surveys to officers at least six months after completion of the training. In these initial six month follow ups, few officers completed surveys ($n = 9, 7.96\%$). To bolster the number of responses, the KYDOCJT permitted the research team to reach out to course participants again in April and May of 2022. After three waves of emails, 27 officers completed surveys producing a response rate of 28.4%, which is common in studies that used web-based surveys of police officers to evaluate police training efforts (see B. Campbell & Lapsey Jr., 2021; Franklin et al., 2020; Ranzetti et al., 2015). These 27 long-term follow up surveys were matched with officers' immediate post-training surveys. On average, 442.9 days (median = 375 days) had passed between study participants' first post-treatment survey assessment and the long-term follow up assessment with a minimum of 214 days and a maximum of 931 days.

To assess the long-term effects of the training, paired samples t-tests were used to compare officers' immediate post-training scores with the long-term follow up scores for each of the dependent variables included in the surveys. Results showed mixed support for Hypotheses 1b, 2b, and 3b. Specifically, mean scores did not significantly differ when comparing post-training and long-term follow up assessments for IRMA-SF ($(t(26) = -.460, p = .325)$), CWI knowledge ($(t(26) = .358, p = .361)$), and CWI confidence ($(t(26) = .266, p = .396)$). However,

like Lonsway et al.'s (2001) study, officers' PVB scores ($t(26) = -2.307, p = .015$) significantly deteriorated, indicating an attitudinal rebounding effect in officers' knowledge of victim responses to trauma. Thus, taken together, the long-term follow up supported Hypotheses 2b, and 3b, and Hypothesis 1b was not supported in the follow up data. Table 7 displays a summary of the hypotheses testing outcomes for the survey data.

Table 7. Summary of hypothesis testing outcomes for survey data

Hypotheses	Outcome
<i>RQ1a: Does VCTI training improve police officers' perceptions of sexual assault victim behaviors as measured by the Ask (2009) Perceptions of Victim Behaviors (PVB) scale?</i>	
<i>Hypothesis 1a: the KYDOCJT VCTI training will improve police officers' perceptions of sexual assault victim behaviors as measured by the Ask (2009) Perceptions of Victim Behaviors (PVB) scale.</i>	S
<i>RQ1b: If VCTI training does initially improve police officers' perceptions of victim behaviors, are the improvements maintained in the follow up survey?</i>	
<i>Hypothesis 1b: post-training PVB scores will be sustained over time.</i>	S
<i>RQ2a: Does VCTI training does reduce rape myth acceptance as measured by the Illinois Rape Myth Acceptance Scale Short Form (IRMA-SF) scale?</i>	
<i>Hypothesis 2a: the KYDOCJT VCTI training will reduce rape myth acceptance as measured by the Illinois Rape Myth Acceptance Scale Short Form (IRMA-SF) scale.</i>	NS
<i>RQ2b: If VCTI training does reduce rape myth acceptance, do these reductions remain stable in the follow up survey?</i>	
<i>Hypothesis 2b: post-training IRMA-SF scores will be sustained over time.</i>	S
<i>RQ3a: Does VCTI training improve police officers' comfort with interviewing survivors as measured by the confidence with interviewing (CWI) scale?</i>	
<i>Hypothesis 3a: the KYDOCJT VCTI training will improve police officers' knowledge of and comfort with VCTI interview techniques as measured by the confidence with interviewing (CWI knowledge and CWI confidence) scale.</i>	S
<i>RQ3b: If VCTI training improve police officers' confidence with interviewing (CWI) scores, are these improvements maintained in the follow up survey?</i>	
<i>Hypothesis 3b: post-training officer knowledge of and confidence with interviewing survivors of sexual assault will be sustained over time.</i>	NS

Note: S = hypothesis was supported, NS = hypothesis was not supported

Results: Simulated Interviews

Effects of VCTI Training on Officer Behavior

To test Hypothesis 4, our analyses of the simulated interview data was carried out in four steps. First, descriptive statistics for the simulated interview sample are presented. Second, we conducted balance tests to ensure that our experimental and treatment groups were comparable based on demographics, training, and experience measures. Third, we tested the immediate effects of the training on officers' PVB, IRMA-SF, and CWI scores using t-tests to assess both within-subjects and between-subjects comparisons. Within-subjects comparisons were conducted using paired samples t-tests to assess differences in control group participants' pre-training and post-training interview performance. Between-subjects comparisons were conducted using independent samples t-tests to compare the control group's pre-training interview performance with the treatment group's post-training interview performance. Fourth, four OLS models were estimated to compare the control groups' pre-training interview performance with the treatment groups' post-training interview performance while controlling for demographic variables. The OLS models assess the effects of the VCTI training on officers' interview performance measures – IRB, EOO, UVCTI, EI – while controlling for demographics, prior training, and investigative experience.

Simulated Interview: Descriptive Statistics

Audio and/or video data were available for 88 officers who completed simulated interviews with standardized actors. Descriptive statistics for these officers are displayed in Table 8. Most officers in this sample were white (n = 81, 92.0%), male (n = 73, 83.0%), and held at least a two-year college degree (n = 52, 59.1%). On average, officers were 40.5 years old and

had 14.5 years of police experience. Finally, most officers responded to at least one sexual assault report in the last year (n = 49, 55.7%), and over half of the officers had some previous training on police response to sexual assault survivors (n = 51, 59.1%).

Table 8. Simulated interviews: Descriptive statistics for treatment group, control group, and full sample (N=88)

Variables	Control group n = 46 n(%)	Treatment group n = 42 n(%)	Full sample N = 88 n(%)
Prior sexual assault training	24 (52.2)	28 (66.7)	52 (59.1)
Age (\bar{x})	40.5	40.5	40.5
Male (\bar{x})	.89	.76	.83
White officer (\bar{x})	.87	.97	.92
Education			
High school	22 (47.8)	14 (33.3)	36 (40.9)
Two-year degree	7 (15.2)	12 (28.6)	19 (21.6)
Four-year degree	16 (34.8)	13 (31.0)	29 (33.0)
Graduate degree	1 (2.2)	3 (7.1)	4 (4.5)
Years police (\bar{x})	14.5		
Sexual assault reports in last year			
0	17 (37.0)	12 (28.6)	29 (33.0)
1 to 5	18 (39.1)	17 (40.5)	35 (39.8)
6 to 10	6 (13.0)	3 (7.1)	9 (10.2)
11 to 20	2 (4.3)	5 (11.9)	7 (8.0)
21 or more	3 (6.5)	5 (11.9)	8 (9.1)
Officer rating of standardized interview experiences			
Improved my confidence	–	–	5.69
Improved training experience	–	–	5.80
Simulation was realistic	–	–	5.75

Note: \bar{x} indicates number displayed is an average.

To measure officers’ perceptions of how useful and realistic the simulated interviews with standardized actors were, we included three survey items in the post-training assessments. These items asked officers to rate their agreement with the statements listed below on a scale ranging from 1 = strongly disagree to 6= strongly agree.

1. Participating in the simulated interview improved my confidence in conducting victim interviews.
2. The simulated interview was valuable in improving my training experience.
3. Based on my experiences interviewing crime victims, I found the simulation to be realistic.

Average ratings for each item were: (1) improved my confidence – 5.69, (2) improved my training experience – 5.80, and (3) the simulation was realistic – 5.75. This means that overall, study participants found the experience interviewing standardized actors to be both useful and realistic.

Simulated Interview: Balance Tests

For the officers who completed a simulated interview, we also conducted balance tests to ensure that our treatment and control groups were comparable. Our analyses did not reveal significant differences for previous sexual assault investigations training ($t(86) = -1.380, p = .171$), age ($t(86) = .010, p = .992$), gender ($t(86) = 1.618, p = .109$), race ($t(86) = 1.567, p = .121$), education ($t(86) = -1.000, p = .320$), years in policing ($t(86) = -.015, p = .988$), or number of sexual assault reports responded to in the last year ($t(86) = -1.277, p = .205$). However, like our analyses of the survey data above, we included each demographic variable in our multivariable models to control for small differences across groups that may impact outcomes.

Hypothesis 4: Officer Interview Performance

To test Hypothesis 4, we conducted t-tests to assess the effects of the training on officer interview performance to examine both within- and between-subjects differences. We also estimated four OLS models that controlled for demographic variables to assess the multivariable relationship between training and our officer interview performance dependent variables. The

analyses of the relationship between VCTI interview training and behavioral outcomes are discussed below.

Investigator Rapport Building (IRB). When assessing the relationship between training and officers' within-subjects IRB scores, a paired samples t-test revealed a significant increase in the post-training IRB ($M = 3.520$, $SD = 0.309$) compared to the pre-training IRB ($M = 2.951$, $SD = 0.349$) scores among members of the control group ($(t(44) = -9.089, p < .001)$). The between-subjects independent samples t-test comparing the treatment group's post-training IRB ($M = 3.535$, $SD = 0.402$) with the control group's pre-training IRB ($M = 2.951$, $SD = 0.349$) scores, also revealed a significant improvement in post-training IRB scores ($(t(44) = -7.283, p < .001)$). The OLS model (Model 5) that assessed the impact of training on IRB scores while controlling for demographic variables is displayed in Table 9. Consistent with Hypothesis 4, the VCTI training significantly improved officers' IRB scores ($b = .555, p < .001, r = .642$), while no control variables were significantly related to officers' IRB scores. This means that training had a large effect on IRB performance.

Elements of the Offense (EOO). In our within-subjects comparison of the control group's pre-training EOO ($M = 3.067$, $SD = 0.581$) and post-training EOO ($M = 3.219$, $SD = 0.404$) scores, the paired samples t-test detected a significant improvement ($(t(44) = -1.958, p = .028)$). The between-groups comparison also detected a significantly higher EOO score ($(t(86) = -7.283, p < .001)$) for the treatment group's post-training scores ($M = 3.715$, $SD = 0.380$) when compared to the control group's pre-training scores ($M = 3.067$, $SD = 0.581$). The multivariable OLS model (Model 6, Table 9) indicated that the VCTI training significantly improved officers' EOO scores net of control variables ($b = .543, p < .001, r = .260$) and produced a large effect.

In Model 6, one control variable – number of sexual assault reports in the last year – was significantly correlated with an increase in officers’ EOO scores ($b = .155, p = < .001, r = .386$).

Table 9. OLS treatment group post-test vs. control group pre-test on IRB and EEO

<i>Model 5 Investigator Rapport Building (IRB)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	.555	.083	<.001	.642
Any prior SA training	-.049	.086	.569	.097
Gender	.187	.120	.123	-.230
White officers	-.097	.073	.188	-.171
Education	.008	.044	.847	.110
Years in policing	.003	.004	.538	.026
Sexual assault reports in last year	.024	.035	.502	.130
Constant	3.190			
<i>F</i>	9.053			
Adjusted R ²	.393			
<i>Model 6 Elements of the Offense (EOO)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	.543	.102	<.001	.556
Any prior SA training	.021	.107	.846	.202
Gender	-.145	.149	.332	-.291
White officers	-.086	.091	.346	-.036
Education	.100	.054	.068	.247
Years in policing	.006	.005	.266	.012
Sexual assault reports in last year	.155	.043	<.001	.386
Constant	2.846			
<i>F</i>	9.652			
Adjusted R ²	.410			

Note: Entries include unstandardized coefficients (*b*), standard errors (SE), *p*-value (*p*), and Pearson correlation (*r*).

Use of VCTI Interview Techniques (UVCTI). In our between-subjects analysis of the control group officers’ pre-training ($M = 3.029, SD = 0.408$) and post-training ($M = 3.718, SD = 0.273$) UVCTI scores, a significant increase was revealed ($(t(44) = -9.688, p < .001)$). The between-subjects comparison also revealed that the treatment group’s UVCTI scores ($M = 3.119, SD = 0.477$) were significantly higher than the control group’s scores ($M = 3.714, SD = 0.408$) ($(t(86) = -8.321, p < .001)$). Table 10, Model 7 displays the results from our between-subjects

multivariable model examining the effect of the VCTI training on officers' UVCTI scores while controlling for demographic characteristics. In this model, results indicated that the training variable exerted a significant and large effect on officers UVCTI scores ($b = .668, p < .001, r = .668$), and no control variables were significantly correlated with the outcome variable.

Ending the Interview (EI). When examining the impact of training on officers' EI scores, our within-subjects paired samples t-test detected a significant improvement ($t(86) = -3.835, p = .001$) in the control groups post-training scores ($M = 2.806, SD = 0.377$) compared to their pre-training scores ($M = 2.569, SD = 0.279$). The between-subjects independent samples t-test revealed that the treatment group ($M = 3.119, SD = 0.477$) scored significantly higher than the control group ($M = 2.569, SD = 0.279$) on the EI scale ($t(86) = 5.636, p < .001$). Finally, the OLS model (Model 8, Table 10), including control variables, indicated that training significantly increased EI scores ($b = .525, p < .001, r = .581$) producing a large effect. In Model 8, none of the control variables were significantly correlated with EI.

To summarize, these results indicate that Hypothesis 4 was supported, as the VCTI training was effective at improving officers' performance in (a) using investigator rapport building techniques (IRB), (b) establishing the elements of the offense (EOO), (c) using VCTI techniques learned in the training (UVCTI), and (d) ending the interview in a trauma informed manner (EI). Additionally, in all four interview performance OLS models, the VCTI training variable produced the largest effect size, indicating that the VCTI training had a significant and substantial impact on each of the behavioral outcome variables.

Table 10. OLS treatment group post-test vs. control group pre-test on UVCTI and EI

<i>Model 7 Use of VCTI Interview Techniques (UVCTI)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	.668	.086	<.001	.668
Any prior SA training	-.047	.090	.598	.112
Gender	-.238	.125	.061	-.306
White officers	.050	.076	.510	-.014
Education	.047	.046	.309	.216
Years in policing	.000	.004	.953	-.007
Sexual assault reports in last year	-.014	.036	.697	.107
Constant	3.129			
<i>F</i>	11.280			
Adjusted R ²	.453			
<i>Model 8 Ending the Interview (EI)</i>				
Independent variables	<i>b</i>	SE	<i>p</i>	<i>r</i>
VCTI training (treatment = 1)	.525	.089	<.001	.581
Any prior SA training	-.036	.093	.701	.082
Gender	-.121	.130	.353	-.204
White officers	-.006	.079	.935	-.068
Education	.017	.047	.720	.130
Years in policing	-.002	.004	.657	-.062
Sexual assault reports in last year	.017	.038	.656	.145
Constant	2.684			
<i>F</i>	6.290			
Adjusted R ²	.299			

Note: Entries include unstandardized coefficients (*b*), standard errors (SE), *p*-value (*p*), and Pearson correlation (*r*).

Conclusions, Policy, and Research Recommendations

Conclusions

In this study, we used a randomized experimental design to assess the effects of a 40-hour VCTI training on police officers' knowledge of trauma informed interviewing techniques, perceptions of victims, and behavior in simulated interviews with standardized actors. The experimental survey design and the random assignment of training courses to treatment and control groups permitted an opportunity to assess both the short- and long-term effects of training on survey measures of officers' (a) knowledge of the neurobiology of trauma, (b) adherence to rape myths, and (c) knowledge of and confidence to carry out a series of VCTI interviewing techniques. Additionally, the inclusion of mock interviews with standardized actors allowed us to assess the relationship between the training and officers' use of VCTI interviewing techniques in simulated interviews. Overall, findings indicated that the training was effective at improving attitudinal, cognitive, and behavioral outcomes. Additionally, the inclusion of demographic variables in our multivariable OLS models indicated that our findings were robust, and the VCTI training produced the largest effect size in each of our OLS models.

The design of this study was uniquely capable of drawing causal inferences about the effects of sexual assault training on both officers' survey outcomes and performance in simulated interviews. As mentioned previously, this is an important addition to the police sexual assault training literature because few studies have assessed the effects of training on officer behavior (Lonsway et al., 2001; Mourtgos et al., 2021; Tidmarsh et al., 2021). Additionally, while some U.S. studies have assessed the relationship between training and behavior among samples of police cadets (Lonsway et al., 2001) and patrol officers (Mourtgos et al., 2021), to our knowledge this study is the first U.S. study to examine the effects of training on active police

officers' performance in simulated interviews. Finally, this study is the first to our knowledge to use a randomized experimental design to assess the effects of VCTI training on active officers' behavior in mock interviews.

Regarding officers' cognitive and attitudinal outcomes, our study adds to the literature that has demonstrated training can improve positive short- and long-term outcomes. As shown in our analyses of survey data, the training had positive short-term effects on officers' PVB, CWI knowledge, and CWI confidence scores. Additionally, the changes in CWI knowledge and CWI confidence scores were maintained in the analyses of follow up data. Notably, two of our hypotheses regarding the survey data were not supported. First, the VCTI training did not have a significant short-term effect on IRMA-SF scores. This finding could be due to the relatively low IRMA-SF scores detected in the pre-training survey data. The finding could also have been caused by the number of officers ($n = 58$, 61.1%) who had some previous sexual assault training. Indeed, prior evaluations of a similar sample found that sexual assault training can reduce officers' adherence to rape myths, and these reductions held in long-term follow up analyses (see B. Campbell et al., 2020, 2021). Second, like Lonsway and colleagues' (2001) experimental study, the significant improvement in officers' knowledge of survivor trauma – measured by the PVB – deteriorated in the follow up data. This could indicate an attitudinal rebounding effect and highlights the need for ongoing, annual refresher courses aimed at maintaining officers' long-term knowledge of training topics.

In the analyses of officers' behavioral outcomes, our within- and between-subjects analyses detected significant improvements for all outcomes when comparing (a) the control group's pre-training interview performance with their post-training interview performance, and (b) the control group's pre-training interview performance with the treatment group's post-

training performance. Based on these findings, the current study adds to the literature demonstrating that VCTI interview training can be effective at producing positive behavioral outcomes – at least in the short-term (see Tidmarsh et al., 2021).

Policy and Research Recommendations

The results presented here are consistent with previous literature and recommendations from advocacy groups that suggest police sexual assault training can be effective at improving officers' perceptions of victims, knowledge of trauma informed practice, and behavior. This finding is important as prior research has shown that poor treatment of victims by police officers contributes to secondary victimization and case attrition (Lapsey Jr. et al., 2021; Lorenz et al., 2021). Although the evidence base for the effectiveness of police sexual assault training on officer knowledge and behavior is small, the lead authors' previous work in multiple jurisdictions (B. Campbell et al., 2020; 2021; B. Campbell & Wells, 2014) and findings from other studies in multiple jurisdictions (Franklin et al., 2020; Lathan et al., 2019; Lonsway et al., 2001; Mourtgos et al., 2021) suggest that police sexual assault training of varying lengths and instruction modalities can be effective. However, more work in this area is needed to train officers and other criminal justice practitioners, as well as to determine optimal training curricula, length, and dosage (Murphy & Hine, 2019). Based on this need, we provide recommendations for future training programming and research.

Recommendation 1: Jurisdictions should implement and evaluate VCTI interview training courses with varying lengths and content in other jurisdictions. The VCTI interview training program evaluated in this study was 40-hours in length. Trainings of this length represent a significant investment by police agencies who implement – or send their officers to – such training. Though previous research has recommended that extensive training programs are

needed to improve police response to sexual assault training programs (B. Campbell et al., 2020; 2021; B. Campbell & Wells, 2014; Darwinkel et al., 2013; Morabito et al., 2019; Tidmarsh et al., 2021), jurisdictions should consider implementing and evaluating shorter 16- or 24-hour training programs to determine the ideal training content and length needed to produce positive outcomes. In this way, future research can determine how to provide consistent training across jurisdictions while considering resource constraints. Following this recommendation, the Commonwealth of Kentucky has created a 24-hour version of the 40-hour VCTI training evaluated in this study. The 24-hour training programs will be implemented and evaluated in 2022 and 2023 to determine if the findings presented in this study can be replicated in the shorter 3-day trainings.

Recommendation 2: Jurisdictions should continue to include mock interviews with standardized actors in VCTI training to (a) provide hands on training experience in a low threat environment, and (b) give officers an opportunity to try new skills before entering the field.

Second, this study demonstrated that it is beneficial to incorporate standardized actors in police training programs. In conversations with course participants, they discussed how the hands-on experiences broke up the monotony of traditional PowerPoint and lecture-based instruction. Additionally, officers discussed the benefit of using actors instead of conducting role-play exercises with other police officers. Officers indicated that in traditional police training, police often only engage in role-playing exercises with fellow officers or instructors who have extensive experience with the criminal justice system. In this study, participants provided anecdotes that obtaining feedback from the actors was beneficial in fine-tuning their skills and in highlighting the mistakes some officers made. For example, in conversations with participants in this study, some officers indicated that they learned how to explain the process of an interview

and justify asking sensitive questions in a trauma informed manner. The officers said without the experience of interviewing actors, they may not have realized their questioning appeared to be invasive and without explanation.

In addition to the benefits for officers, the cost of including actors in this training was feasible. Overall, the cost of developing the scripts, training actors, and paying actors to conduct the interviews was \$10,590. This includes the one-time cost of \$7,200 for script development and actor training. Given the low startup costs, police training academies should partner with local theater arts groups and/or university theater arts departments to develop a team of actors who can supplement police training by providing realistic scenario-based simulations.

Recommendation 3: Jurisdictions should develop and implement VCTI interview training for other criminal justice actors including victim advocates and prosecutors. Through discussions with the Kentucky Sexual Assault Response Team Advisory Committee and the Kentucky Sexual Assault Kit Initiative Task Force, criminal justice practitioners highlighted the need for similar VCTI training programs aimed at improving interactions between prosecutors and victim advocates and the survivors they serve. Following the curriculum and inclusion of actors proposed in the current study, training programs aimed at advocates and prosecutors should be developed to improve the overall criminal justice response to sexual assault survivors.

Recommendation 4: VCTI interview training for initial police interactions with sexual assault survivors should be developed and implemented. Using actors to train patrol officers at the academy or in-service level about how to conduct initial interviews with sexual assault survivors in a trauma-informed manner may also be beneficial. As prior research has demonstrated, patrol officers are often crime victims' first contact with the criminal justice system. However, many police academies and law enforcement agencies do not require formal

training regarding VCTI communication and interviews conducted during the earliest stages of reporting a crime to police. Similar to the findings in Mourtgos and colleagues' (2021) study, implementing this type of training for patrol officers may improve the likelihood survivors will remain engaged with the criminal justice system.

Recommendation 5: More jurisdictions should evaluate sexual assault response training using quasi-experimental and experimental designs that assess cognitive, attitudinal, and behavioral outcomes. As highlighted by prior research, few evaluations of police sexual assault investigations training have been completed. As jurisdictions begin to implement this type of training, agencies should partner with researchers to develop rigorous evaluation designs. Doing so will continue to build an evidence base for police sexual assault response training and can continue to inform other jurisdictions about what does – and does not – work when teaching officers about trauma informed responses to sexual assault survivors.

Limitations

Though this study has several policy implications and makes methodological contributions to the police sexual assault training literature, our study is not without limitations. First, because officers who participated in this study were from several different law enforcement agencies, we were not able to assess how effective this training program was in actual cases. To overcome this limitation, future research should obtain transcripts or audio recordings of officers' interviews with survivors in cases both before and after training. In this way, researchers can determine if officer behavior in mock interviews carries over to interviews with actual survivors of sexual assault. Second, related to the first limitation, due to the officers in our sample working in jurisdictions throughout Kentucky, it was not feasible for us to complete long-term follow up interviews with actors. Future studies should replicate this VCTI training

program and incorporate methods to conduct follow up interviews to assess the longer-term effects of such training on officer behavior. Doing so will allow future studies to determine (a) if these findings hold over time, and (b) the optimal timing for refresher courses aimed at maintaining officers' knowledge and skill set.

Despite these limitations, this study contributes new knowledge to the police sexual assault training literature by providing methodological advancements and demonstrating that actors can be used to enhance and evaluate training effectiveness. Future studies should replicate this work in other training settings to determine if this type of programming can have positive results across jurisdictions. Additionally, the results presented here contribute evidence to the argument that training can improve attitudinal, cognitive, and behavioral outcomes among law enforcement officers. These outcomes may improve the treatment of sexual assault survivors and help facilitate victim engagement with sexual assault investigations.

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APPENDIX A

KYDOCJT sexual assault investigation training modules and time allocated

Module	Hours
1. Orientation	1
2. KY sexual assault laws	2
3. Cultural myths and misconceptions	1
4. Victim impact	2
5. Model law enforcement response to sexual assault	3
6. Coordinated community response to sexual assault	4
7. Law and investigative strategy	4
8. Meeting the needs of special communities	1.5
9. DNA evidence and issues	3
10. Offender dynamics	4
11. The preliminary investigation	4
12. Victim interview	3
13. Unfounded cases	3
14. Course critique	0.5
15. Outside assignments	4
Total	40

APPENDIX B

Curriculum for Victim Centered Interview Training for Sexual Assault Investigators

Class level: Officer of any rank

Method of testing: Rubric

Method of instruction: Classroom

Course Description: This course is designed to enhance the skills of officers to interview sexual assault victims in a trauma informed manner. The investigation of sexual assault cases can be hindered by the use of interrogation methods that revictimize reporters of sexual assault. Thus, the learning outcome for this course will be to teach police officers how to (a) identify elements of trauma, (b) build rapport and trust with victims, (c) conduct interviews in a manner that will minimize revictimization, (d) use evidence based practices (e.g., cognitive interviewing techniques) aimed at triggering memory and enhancing evidence, and (e) apply victim centered interview skills through a simulated interview with standardized actors trained in sexual assault reporting methods. Students will be made aware of the best practices in sexual assault victim interviewing and will have the opportunity to practice interviewing victims in a trauma informed way.

Prerequisites: N/A

Indicate how the need for this curriculum was identified:

1. Job task analysis: No
2. Training needs assessment: Yes
3. Course critiques: Yes
4. Legal requirements: No

Course length: 40 hours

Course schedule, objectives, and bibliography are listed below

Victim Centered Interview Training for Sexual Assault Investigators

Schedule for treatment group:

Day	Start time	Scheduled block	Hours
Monday	08:00 AM	Orientation and pre-training assessment	1
Monday	09:00 AM	Kentucky sexual assault laws review	2
Monday	10:00 AM	Common misconceptions about victims	1
Monday	12:00 PM	Lunch	
Monday	01:00 PM	What not to do in victim interviews	2
Monday	03:00 PM	Victim voices: Terminology through investigation process	2
Monday	05:00 PM	Summary of laws, misconceptions, and what not to do	1
Day	Start time	Scheduled block	Hours
Tuesday	08:00 AM	Model practices for responding to sexual assault	4
Tuesday	12:00 PM	Lunch	
Tuesday	01:00 PM	Impact of sexual assault on victim memory and behavior	4
Tuesday	05:00 PM	Summary of best practices for responding to victims	1
Day	Start time	Scheduled block	Hours
Wednesday	08:00 AM	Trauma informed interview techniques	4
Wednesday	12:00 PM	Lunch	
Wednesday	01:00 PM	Trauma informed interview role play	4
Wednesday	05:00 PM	Summary of trauma informed interview techniques	1
Day	Start time	Scheduled block	Hours
Thursday	08:00 AM	Practice interviews with mock victims	4
Wednesday	12:00 PM	Lunch	
Thursday	01:00 PM	Practice interviews with mock victims	4
Day	Start time	Scheduled block	Hours
Friday	08:00 AM	Recap of trauma informed interview training	1
Friday	09:00 AM	Officer self-care and vicarious trauma	3
Friday	12:00 PM	Critique and post-training assessment	1

Victim Centered Interview Training for Sexual Assault Investigators Treatment Group Objectives

1.	Orientation (1 hour)
1.1	With references, students will be able to identify how this course will be conducted, the appropriate behavior and expectations of the work needed to successfully complete this course in accordance with the Department of Criminal Justice Training policy and procedures. Bibliography: #1
2.	Kentucky sexual assault laws review (2 hours)
2.1	With references and material reviewed in class, students will be able to identify each Kentucky Sexual Assault Statute, describe the elements of each offense, and potential defenses and investigative strategies for each offense type. Bibliography: #2, #3
3.	Common misconceptions about victims (1 hour)
3.1	With references and class discussion, students will be able to recognize common sexual assault myths and misconceptions about sexual assault victims and crimes of sexual violence.
3.2	Without reference, stents will be able to identify common rape myths and societal misconceptions/stereotypes about “real rape”.
3.3	Without reference, students will be able to describe the causes of societal acceptance of sexual assault myths
3.4	Without reference, students will be able to describe how rape myths do not align with or resemble the majority of cases handled by law enforcement. Bibliography: #4, #5, #6, #7, #8, #9
4.	What not to do in victim interviews (2 hours)
4.1	Without reference, students will be able to identify practices that contribute to revictimization of sexual assault victims.
4.2	Without reference, students will be able to describe how interrogation techniques are not applicable to interviews with victims.
4.3	Without reference, students will be able to articulate the negative health and criminal justice outcomes caused revictimization of sexual assault victims. Bibliography: #4, #7, #9, #10, #11, #12, #13, #14, #15
5.	Victim voices: Terminology through the investigation process (2 hours)
5.1	With reference and course materials, students will be able to articulate the appropriate terms used by investigators that minimize revictimization. Bibliography: #4, #16, #17, #18
6.	Summary of laws, misconceptions, and what not to do in victim interviews (1 hour)

6.1	Using referenced and course material, students will be able to explain the different types of sexual assault cases they may encounter in Kentucky.
6.2	Using referenced and course material, students will be able to identify common myths about sexual assault cases and victims.
6.3	Using referenced and course material, students will be able to describe how sexual assault myths and revictimization harm victims of sexual assault. Bibliography: #2, #3, #5, #7, #9, #11, #14, #15, #16
7.	Model practices for responding to sexual assault (4 hours)
7.1	Using course discussion and referenced material, students will be able to explain best practices when responding to an initial report of sexual assault.
7.2	Using referenced material and course discussion, students will be able to describe how to collect information from victims of sexual assault, and complete a preliminary report.
7.3	From course discussion and referenced materials, students will be able to identify policies regarding best practices in sexual assault response. Bibliography: #4, #12, #19, #20, #21
8.	Impact of sexual assault on victim memory and behavior (4 hours)
8.1	Without reference, students will be able to explain the basics of neurobiological responses to trauma of sexual assault victimization.
8.2	Without reference, students will be able to recognize signs of tonic immobility among sexual assault victims.
8.3	Without reference, students will be able to recognize the range of emotional responses exhibited by victims of sexual assault.
8.4	Without reference, students will be able to recognize evidence of trauma among sexual assault victims. Bibliography: 4, #10, #12, #19, #20, #21
9.	Trauma informed interview techniques (4 hours)
9.1	With reference and as discussed in class, student will be able to identify challenges to victim credibility and how to overcome these challenges in an investigation
9.2	Without reference, students will be able to explain the steps needed to prepare for a successful investigation.
9.3	Without reference, the student will be able to explain who needs to be present during a victim interview.
9.4	Without reference, the student will be able to describe how to build rapport with a victim and encourage a victim to tell their story without interruption.
9.5	Without reference students will be able to explain the methods to describe methods of minimizing trauma in interviews with sexual assault victims.
9.6	Without reference, students will be able to describe the information that needs to be obtained during a victim interview.

9.7	Without reference, students will have the ability to explain the victim interview process, and the next steps in an investigation.
9.8	Without reference, students will be able to conduct interviews of victims in a trauma informed manner. Bibliography: #4, #12, #22, #23, #24, #25, #26, #27, #28, #29, #30
10.	Trauma-informed interview role play (4 hours)
10.1	Victims will obtain experience in trauma-informed interviewing by practicing with a fellow classmate and conducting peer-evaluations. Bibliography: #29, #30
11.	Summary of trauma informed interview techniques (1 hour)
11.1	With reference, students will have the ability to describe the methods of conducting a trauma informed interview.
12.	Practice interviews with mock victims (8 hours)
12.1	Students will be provided the experience to practice using trauma informed interview techniques with standardized patient actors.
12.2	Students will self-assess their performance in mock interviews with the information learned throughout the course. Bibliography: #31
13.	Recap of trauma informed interview training (1 hour)
13.1	Without reference, students will be able to explain practices for conducting a trauma-informed interview. Bibliography: ##4, #12, #22, #23, #24, #25, #26, #27, #28, #29, #30
14.	Officer self-care and vicarious trauma
14.1	With reference and class discussion, students will be able to describe methods of coping with vicarious trauma. Bibliography: #32
15.	Critique and post-training assessment
15.1	Students will complete an evaluation form and post-training assessments. Bibliography: #1

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Schedule for control group:

Day	Start time	Scheduled block	Hours
Monday	08:00 AM	Orientation and pre-training assessment	1
Monday	09:00 AM	Interviews with mock victims	3
Monday	12:00 PM	Lunch	
Monday	01:00 PM	Interviews with mock victims	4
Day	Start time	Scheduled block	Hours
Tuesday	09:00 AM	Kentucky sexual assault laws review	2
Tuesday	10:00 AM	Common misconceptions about victims	2
Tuesday	12:00 PM	Lunch	
Tuesday	01:00 PM	What not to do in victim interviews	2
Tuesday	03:00 PM	Victim voices: Terminology through investigation process	2
Tuesday	05:00 PM	Summary of laws, misconceptions, and what not to do	1
Day	Start time	Scheduled block	Hours
Wednesday	08:00 AM	Model practices for responding to sexual assault	4
Wednesday	12:00 PM	Lunch	
Wednesday	01:00 PM	Impact of sexual assault on victim memory and behavior	4
Wednesday	05:00 PM	Summary of best practices for responding to victims	1
Day	Start time	Scheduled block	Hours
Thursday	08:00 AM	Trauma informed interview techniques	4
Thursday	12:00 PM	Lunch	
Thursday	01:00 PM	Trauma informed interview role play	4
Thursday	05:00 PM	Summary of trauma informed interview techniques	1
Day	Start time	Scheduled block	Hours
Friday	08:00 AM	Recap of trauma informed interview training	1
Friday	09:00 AM	Officer self-care and vicarious trauma	3
Friday	12:00 PM	Critique and post-training assessment	1

**Victim Centered Interview Training for Sexual Assault Investigators
Control Group Objectives**

1.	Orientation (1 hour)
1.1	With references, students will be able to identify how this course will be conducted, the appropriate behavior and expectations of the work needed to successfully complete this course in accordance with the Department of Criminal Justice Training policy and procedures. Bibliography: #1
2.	Practice interviews with mock victims (8 hours)
2.1	Students will be provided the experience to practice using trauma informed interview techniques with standardized patient actors.
2.2	Students will self-assess their performance in mock interviews with the information learned throughout the course. Bibliography: #31
3.	Kentucky sexual assault laws review (2 hours)
3.1	With references and material reviewed in class, students will be able to identify each Kentucky Sexual Assault Statute, describe the elements of each offense, and potential defenses and investigative strategies for each offense type. Bibliography: #2, #3
4.	Common misconceptions about victims (1 hour)
4.1	With references and class discussion, students will be able to recognize common sexual assault myths and misconceptions about sexual assault victims and crimes of sexual violence.
4.2	Without reference, stents will be able to identify common rape myths and societal misconceptions/stereotypes about “real rape”.
4.3	Without reference, students will be able to describe the causes of societal acceptance of sexual assault myths
4.4	Without reference, students will be able to describe how rape myths do not align with or resemble the majority of cases handled by law enforcement. Bibliography: #4, #5, #6, #7, #8, #9
5.	What not to do in victim interviews (2 hours)
5.1	Without reference, students will be able to identify practices that contribute to revictimization of sexual assault victims.
5.2	Without reference, students will be able to describe how interrogation techniques are not applicable to interviews with victims.
5.3	Without reference, students will be able to articulate the negative health and criminal justice outcomes caused revictimization of sexual assault victims. Bibliography: #4, #7, #9, #10, #11, #12, #13, #14, #15

6.	Victim voices: Terminology through the investigation process (2 hours)
6.1	With reference and course materials, students will be able to articulate the appropriate terms used by investigators that minimize revictimization. Bibliography: #4, #16, #17, #18
7.	Summary of laws, misconceptions, and what not to do in victim interviews (1 hour)
7.1	Using referenced and course material, students will be able to explain the different types of sexual assault cases they may encounter in Kentucky.
7.2	Using referenced and course material, students will be able to identify common myths about sexual assault cases and victims.
7.3	Using referenced and course material, students will be able to describe how sexual assault myths and revictimization harm victims of sexual assault. Bibliography: #2, #3, #5, #7, #9, #11, #14, #15, #16
8.	Model practices for responding to sexual assault (4 hours)
8.1	Using course discussion and referenced material, students will be able to explain best practices when responding to an initial report of sexual assault.
8.2	Using referenced material and course discussion, students will be able to describe how to collect information from victims of sexual assault, and complete a preliminary report.
8.3	From course discussion and referenced materials, students will be able to identify policies regarding best practices in sexual assault response. Bibliography: #4, #12, #19, #20, #21
9.	Impact of sexual assault on victim memory and behavior (4 hours)
9.1	Without reference, students will be able to explain the basics of neurobiological responses to trauma of sexual assault victimization.
9.2	Without reference, students will be able to recognize signs of tonic immobility among sexual assault victims.
9.3	Without reference, students will be able to recognize the range of emotional responses exhibited by victims of sexual assault.
9.4	Without reference, students will be able to recognize evidence of trauma among sexual assault victims. Bibliography: 4, #10, #12, #19, #20, #21
10.	Trauma informed interview techniques (4 hours)
10.1	With reference and as discussed in class, student will be able to identify challenges to victim credibility and how to overcome these challenges in an investigation
10.2	Without reference, students will be able to explain the steps needed to prepare for a successful investigation.
10.3	Without reference, the student will be able to explain who needs to be present during a victim interview.

10.4	Without reference, the student will be able to describe how to build rapport with a victim and encourage a victim to tell their story without interruption.
10.5	Without reference students will be able to explain the methods to describe methods of minimizing trauma in interviews with sexual assault victims.
10.6	Without reference, students will be able to describe the information that needs to be obtained during a victim interview.
10.7	Without reference, students will have the ability to explain the victim interview process, and the next steps in an investigation.
10.8	Without reference, students will be able to conduct interviews of victims in a trauma informed manner. Bibliography: #4, #12, #22, #23, #24, #25, #26, #27, #28, #29, #30
11.	Trauma-informed interview role play (4 hours)
11.1	Victims will obtain experience in trauma-informed interviewing by practicing with a fellow classmate and conducting peer-evaluations. Bibliography: #29, #30
12.	Summary of trauma informed interview techniques (1 hour)
12.1	With reference, students will have the ability to describe the methods of conducting a trauma informed interview.
13.	Recap of trauma informed interview training (1 hour)
13.1	Without reference, students will be able to explain practices for conducting a trauma-informed interview. Bibliography: ##4, #12, #22, #23, #24, #25, #26, #27, #28, #29, #30
14.	Officer self-care and vicarious trauma
14.1	With reference and class discussion, students will be able to describe methods of coping with vicarious trauma. Bibliography: #32
15.	Critique and post-training assessment
15.1	Students will complete an evaluation form and post-training assessments. Bibliography: #1





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APPENDIX B: Laminated Handout

<p> Kentucky Department of Criminal Justice Training</p> <p>Victim Centered Interview Guide</p> <p>Initial response:</p> <ul style="list-style-type: none">• Start by believing – approach without bias• Investigate perp – not victim• Avoid victim blaming language/document signs victim trauma (tonic immobility, fragmented information, dissociation, variation of emotional display)• Avoid “why did you” questions• Be patient and let the victim talk/be compassionate <p>Preparing for victim interviews:</p> <ul style="list-style-type: none">• Complete background work, including review of reports/evidence (if available)• Remember victim perspective – difficult to discuss details, fear of blame, fear of reporting <p>Conducting the interview:</p> <ul style="list-style-type: none">• Allow two sleep cycles when possible• Record interviews when possible• Consider having an advocate present• Build rapport (introduce yourself by first name, explain interview process, reassure victim safety, apologize for trauma, assure that case is a priority, assure that victim safety is a priority)	<p> Kentucky Department of Criminal Justice Training</p> <p>Conducting the interview (continued):</p> <ul style="list-style-type: none">• Advice from advocates<ul style="list-style-type: none">• Speak to victims at eye level• Minimize use of notes (when recording)• Allow options for interview (pace, seating, breaks)• Use active listening skills<ul style="list-style-type: none">• Eye contact/show sincerity• Communication<ul style="list-style-type: none">• Allow victim to speak and avoid interruption• Be patient and use supportive language<ul style="list-style-type: none">• “This must be difficult”, “We can take our time”, “You are brave for reporting” <p>Remember to use cognitive interview techniques:</p> <ul style="list-style-type: none">• Report all details – even small ones• Context – allow victim to recreate the event• Ordering – allow victim to start anywhere/avoid forcing linear ordering• Change perspective – ask victim to report as if they were reporting from someone else’s view• Ask “What” questions – “what happened next?”, “can you tell me more about that?”• Ask sensory questions – sight, sounds, smells that the victim can remember
<p> Kentucky Department of Criminal Justice Training</p> <p>Closing the interview:</p> <ul style="list-style-type: none">• Allow victim to ask you questions• Ask if you missed anything or if there is more the victim would like to tell you• Explain the next steps in the investigative process<ul style="list-style-type: none">• “I will contact you after I contact the suspect/review or collect more evidence/etc.”• Ask the victim to write down and contact you with information they remember after the interview• Give options for the victim to contact with you• Provide victims with further information on victim and medical services available in your jurisdiction.• Transition to a neutral topic	<p> Kentucky Department of Criminal Justice Training</p> <p>Local sexual assault resources:</p> <p>Rape crisis center (RCC) name: _____</p> <p>RCC website: _____</p> <p>RCC phone: _____</p> <p>SANE examination locations: _____</p> <p>_____</p> <p>_____</p>

APPENDIX C

Section 1: Demographics

1. Agency name
2. Jurisdiction type
3. Agency size
4. Jurisdiction size
5. Sex crimes unit?
6. Age
7. Gender
8. Race/ethnicity
9. Education
10. Years as an officer
11. Years since pre-service
12. Rank
13. Military experience
14. Family member is a police officer
15. Member of a sex crimes unit
16. Ever conducted preliminary investigation of SA
17. Ever conducted detailed follow up investigation of SA
18. How many sexual assault reports have you responded to in the last 12 months
19. How many child sexual assault cases have you responded to in the last 12 months

Section 2: Training and Experience

1. Any specialized training on sexual assault investigation
2. Any training on victim sensitivity
3. Any training on the trauma of victimization
4. Any training on victims' reactions and behaviors in dealing with their victimization
5. Any training on identifying the role of alcohol and/or intoxication in sexual assaults
6. Any training on identifying drug facilitated sexual assault
7. How much knowledge do you have regarding crime victim behaviors (Very little; Little; Some; Very much)
8. How much knowledge do your coworkers have regarding crime victim behaviors (Very little; Little; Some; Very much)
9. According to the following scale, please rate how familiar you are with victim advocates in your area. (1=Very unfamiliar to 6=Very familiar)
10. According to the following scale, please rate how familiar you are with SANE nurses in your area. (1=Very unfamiliar to 6=Very familiar)
11. According to the following scale, please rate how familiar you are with victim services in your area. (1=Very unfamiliar to 6=Very familiar)

Section 3: Self Control Items (Adopted Tangney, Baumeister, & Boone's (2004) Brief Self-Control Scale (BSCS)-pretested with 30 officers-See Wolfe, S.E. Nix, J., & Campbell, B. A. (2018). Police managers' self-control and support for organizational justice. *Law & Human Behavior*, 42(1), 71-82. DOI: <http://dx.doi.org/10.1037/lhb0000273>). Items with an * are reverse coded.

Likert scale: 1=Strongly Disagree through 6=Strongly Agree

1. I am good at resisting temptation
2. I have a hard time breaking bad habits*
3. I say inappropriate things*
4. I do certain things that are bad for me if they are fun*
5. I refuse things that are bad for me
6. Pleasure and fun sometimes keep me from getting work done*
7. I am able to work effectively toward long-term goals
8. I often act without thinking through all of the alternatives*

Section 4: Perceptions about Crime Victim Behaviors (adopted from Karl Ask, 2010)

Likert scale: 1=Strongly Disagree through 6=Strongly Agree

1. A crime victim's display of emotions when recalling the crime is an indicator of the accuracy of his/her statements.
2. A crime victim's reluctance to spontaneously give a detailed account of the crime is an indicator of the accuracy of his/her statements.
3. A crime victim who displays negative emotions (e.g., crying, despair, clear signs of distress) during his/her testimony is likely to be telling the truth.
4. The fact that a crime victim's expressive style of emotions contradicts my expectations is generally a reason to examine that statement's accuracy extra carefully.
5. A crime victim who displays positive emotions (e.g., laughter, smiling) during his/her testimony is not likely to be telling the truth.
6. A crime victim's inability to report details about the event shortly after the crime (less than one day) is a reason to question the accuracy of the statement.
7. Details that appear in a crime victim's memory after a period of time are less reliable than those the victim can remember and report right from the start.
8. The reactions by crime victims to a violent crime differ between people with different cultural backgrounds.
9. The type of relationship between the crime victim and perpetrator influences the victims' emotional expressive style and behavior.

Section 5: Illinois Rape Myth Acceptance Scale (IRMA-SF) (Lonsway et al., 1999)

Likert scale: 1=Strongly Disagree through 6=Strongly Agree

1. SA-3: If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.
2. WI-5: Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."
3. TE-5: If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.
4. WI-1: Many women secretly desire to be raped.

5. FI-2: Most rapists are not caught by the police.
6. NR-1: If a woman doesn't physically fight back, you can't really say that it was rape.
7. DE-2: Men from nice middle-class homes almost never rape.
8. LI-2 Rape accusations are often used as a way of getting back at men.
9. FI-3: All women should have access to self-defense classes.
10. DE-3: It is usually women who dress suggestively that are raped.
11. NR-3: If the rapist doesn't have a weapon, you really can't call it rape.
12. DE-7: Rape is unlikely to happen in the woman's own familiar neighborhood.
13. TE-2: Women tend to exaggerate how much rape affects them.
14. LI-1: A lot of women lead a man on and then they cry rape.
15. FI-4: It is preferable that a female police officer conduct the questioning when a woman reports a rape.
16. SA-5: A woman who "teases" men deserves anything that might happen.
17. SA-8: When women are raped, it's often because the way they said "no" was ambiguous.
18. MT-1: Men don't usually intend to force sex on a woman but sometimes they get too sexually carried away.
19. SA-1: A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.
20. MT-4: Rape happens when a man's sex drive gets out of control.

Section 6: Knowledge of Trauma Informed Responses and Kentucky Laws (Adopted from Campbell & Lapsey Jr. 2018 study of KY DOCJT's Sexual Assault Investigations Training)
Likert scale: 1=Strongly Disagree through 6=Strongly Agree

1. I am familiar with victim centered, trauma informed interviewing techniques (VCTI)
2. If a victim stops cooperating with my investigation, it means the crime most likely did not happen
3. When I interview victims of rape, it is important to look for inconsistencies in their statements
4. It is critical to use interrogation techniques with people who are reporting sexual assault to uncover the truth of what happened
5. If, when explaining an allegation, a victim's story is disjointed and disconnected, the crime most likely did not happen
6. If a victim says they did not resist their assailant, the crime most likely did not happen
7. If a victim is not forthcoming with all details of an assault, they are most likely withholding information about their culpability
8. Rape kits should not be collected if the suspect is likely to use a consent defense
9. Evidence from a rape kit can only be used to identify a suspect
10. If the victim reports an assault after 72 hours, there is no need to collect a rape kit
11. In Kentucky, digital penetration is not considered to be rape
12. If the suspect used a condom during an assault, there is no need to collect a rape kit
13. In Kentucky, law enforcement must collect a victim's rape kit from a hospital, even if the victim does not wish to report the crime to the police
14. Kentucky law requires that police must collect rape kits from a hospital within 24 hours
15. Most of the time, victims of rape do not know their assailant
16. A lot of the time, sexual assault reports are fabricated
17. It is critical to use interrogation techniques with people who are reporting sexual assaults to uncover the truth of what happened
18. Victims who say they felt paralyzed and did not resist an assault likely experienced a "freeze" response during the incident

19. Victims are likely to recall more information about a sexual assault if asked about sensory details (e.g., sight, sounds, smells)

Section 7: Comfort with Interviewing Sexual Assault Survivors (Adapted from Blok et al., 2004 and Schlegel et al., 2012)

Likert scale: 1=Strongly Disagree through 6=Strongly Agree

1. I feel comfortable interviewing sexual assault victims about their victimization
2. I know how to clearly explain the investigative process to sexual assault victims
3. I can clearly explain the investigative process to sexual assault victims
4. I know how to deal with sexual assault victims' emotional/physical reactions to my questions about their victimization
5. I can deal with sexual assault victims' emotional/ physical reactions to my questions about their victimization
6. I know how to ask a sexual assault victim for permission to ask them about their victimization
7. I can ask a sexual assault victim for permission to ask them about their victimization
8. I know how to explain the next steps in the investigative process to victims of sexual assault
9. I can explain the next steps in the investigative process to sexual assault victims
10. I know how to deal with a sexual assault victim's reaction to sensitive questions about their victimization
11. I can deal with a sexual assault victim's reaction to sensitive questions about their victimization
12. I know how to ask victims questions that will collect information about their victimization in a trauma-informed manner
13. I can ask victims questions that will collect information about their victimization in a trauma-informed manner
14. I know how to provide victims with resources and connect them with services to facilitate victim well-being
15. I can provide victims with resources and connect them with services to facilitate victim well-being

CWI items asked only in post-training assessment

16. Participating in the simulated interview improved my confidence in conducting victim interviews
17. The simulated interview was valuable in improving my training experience
18. The simulated interview made me interested in trying more training programs with actors in the future
19. Based on my experiences interviewing crime victims I found the simulation to be realistic

APPENDIX D

Example vignette from Horney & Spohn (1992) page 119:

1. Complaint: On August 1, YEAR complainant met the defendant at a large party. During the party she danced with the defendant several times and also danced with a number of other people. She drank two beers during the course of the party. At about one A.M. the defendant offered her a ride home and she accepted. When she reached the door to her apartment, the defendant asked if he could come in, and when she politely said not, he pushed his way into her apartment. He then pushed the complainant onto her bed and _____ Force factors and criminal act_____. The defendant then left hurriedly. The complainant looked out the window of her apartment and noted the license number and make of the defendant's car. She immediately called the police.
2. Arrest: A police car manned by officers A and B responded to the radio call. They took the initial report and took the complainant to the hospital where she was examined by a doctor. The next morning, after a license check, the defendant was arrested by at his home and was taken to the precinct station and advised of his rights. The defendant, when questioned, admitted to having sexual intercourse with the complainant on the night in question but said that he had been invited in, and that the complainant consented to the sexual intercourse.

Example Script for Standardized Actors

<p>Demographic and Background Information</p>	<ul style="list-style-type: none"> ● Name: [Britney Johnson] ● Age: [Age of Actor closest to 18-25] ● Occupation: [Student] ● Job: [Cashier at Bookstore] ● Suspect’s Name: [Mike Watts] ● Friend’s Name: [Candace Wallace] <p>Note: Use your own information or make up information re: phone #, SS#, etc.</p>
<p>Notes for the Case</p>	<p>Mike’s Physical Appearance: See attached photo.</p> <p>Britney’s Outfit the Night of the Assault: You were wearing jeans and a nice top. You changed into pajama shorts and a t-shirt before getting into bed.</p> <p>SA Appearance: Please wear basic street clothes. Basic jeans/pants or shorts and a shirt with no logos and not a lot of pattern or very bright colors. You may also wear a jacket or sweater.</p> <p>Background: This is your second encounter with the police. A responding officer came to your apartment to get an initial statement from you the morning after the assault. It’s three days after your initial report.</p>
<p>History of Event</p>	<p>Outline of Case</p> <p>The below script is only an outline. Please put this in your own words. However, lines in quotation marks should be used.</p> <p>The second bullet points are only revealed if the interviewer asks you to “tell me more about that” and/or if the interviewer asks you what you are “able” to remember about your “experience.”</p> <ul style="list-style-type: none"> ● You were a party with some of your friends and were drinking. <ul style="list-style-type: none"> ○ It was a house party of a friend of a friend, you think? ○ You think you had around 5 or 6 drinks, maybe. The drinks were mixed drinks, You’re not sure what was in them. ○ You remember it being fruity ● At the party, you texted this guy you’ve been sort of seeing, saying “I wish you were here.” and then at some point you text and ask him to come over later. <ul style="list-style-type: none"> ○ You were never anything serious, just a FWB situation. You worked at the bookstore together, until he joined a fraternity and quit. You first hooked up about six months ago after you saw him at a party and caught up.

	<ul style="list-style-type: none"> ○ He's been a little different the last few times you've hung out, a little more aggressive the last few times. ● So, then he shows up at the party to give you a ride home. <ul style="list-style-type: none"> ○ You texted him to see if he could give you a ride ○ You think people were still showing up when you left. ○ You let your girls know he was taking you home, and you're pretty sure you texted them in the group chat before you got into bed... ○ You stopped at Taco Bell for some food and then after you started messing around the rest of the way to your place. ○ You touched him... but over his pants. ● When you got to your place you went inside for more drinks. <ul style="list-style-type: none"> ○ You both had some beers. ○ You were flirting and watching TV and fooling around. ○ You watched some Adult Swim Show, maybe three or four episodes (Rick and Morty, Futurama, Robot Chicken, Family Guy) ● After awhile you stood up and realized you were a little too drunk and starting to feel sick, so you told him you wanted to go to bed. ● He says he'll head home and you said, "no you've been drinking, you should just stay here." <ul style="list-style-type: none"> ○ You think you told him he could sleep on the couch, but now you're not sure ● You're in bed and he comes and gets in bed with you <ul style="list-style-type: none"> ○ He starts touching you ○ You pull away at first and ask him "what are you doing?" ○ He says "come on, you know you want to" ○ You try to pull away and get up ○ He keeps going and starts putting his weight on you and touches you through your underwear ● Then you don't know how, but he's on top you and "I'm not sure if I said no" but you try and move away again, but he pushes you down even more <ul style="list-style-type: none"> ○ You're on your back when he's on top of you. ● Then he starts touching you <ul style="list-style-type: none"> ○ He gropes you and fingers you ○ He's groping you and squeezing your breasts really hard and keeps fingering you ○ You're not...ready enough for this, so it hurts.
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	<ul style="list-style-type: none"> ● You just stop moving and freeze <ul style="list-style-type: none"> ○ “I just laid there; I didn’t do anything” ○ The light in the room seemed to change colors. It started to move in from the door and created this rainbow. ● You don’t really remember but he stopped eventually and left the room. You tried to fall asleep <ul style="list-style-type: none"> ○ Before he left the room, he kissed your forehead. ● In the morning, you had a lot of pain in your groin, your breasts, and arms. He’s still in your living room when you go to check. <ul style="list-style-type: none"> ○ He was on his way out. You talk about a part of a show you both thought was funny last night and then walk him to his car. ○ You pick up the beer you had last night - a whole 6 pack. ● When he left you took a shower. <ul style="list-style-type: none"> ○ Afterwards you just wanted to get clean. Your friend that you went to the party with called to check on you. You told her basically what happened. She flipped and said she was coming over, saying something about the hospital and police station. ○ Mike texted later to say, “thanks for letting me crash at your place” and you responded, “No problem.” ● Your friend wanted you to go to the hospital, but you didn’t want to go. <ul style="list-style-type: none"> ○ You didn’t feel like you needed to. ○ Your friend really convinced you that you needed to report this to the police.
<p>Thought Process</p>	<ul style="list-style-type: none"> ● When he first climbed into bed you didn’t know what was happening. ● When he was on top of you, you were terrified because you couldn’t get out from under him and were afraid you’d die if you kept moving. ● You stopped moving because you didn’t want something worse to happen to you ● It was like a dream, sort of fuzzy. ● Felt outside your body ● When he left you just wanted it to have never happened so you took a shower because you just needed to get clean.
<p>Tactile Memories</p>	<ul style="list-style-type: none"> ● Touch: <ul style="list-style-type: none"> ○ You couldn’t move your wrists. He kept grabbing them and pinning them into the bed ○ The stubble of his scruff, it rubbed against you. ○ The feel of his shirt, it was a soft cotton. ○ His fingernails were sharp when he was fingering you. ● Smell:

	<ul style="list-style-type: none"> ○ You remember the smell of his cologne mixed with the alcohol on his breath. ● Sounds: <ul style="list-style-type: none"> ○ You remember the sounds of his heavy breathing ○ You both laughing at something during Adult Swim. The sound of the headboard against the wall. ● Sights: <ul style="list-style-type: none"> ○ The light was fuzzy, there wasn't light in the room, it was from the living room. The light kept moving and changing colors. ○ His face started to disappear; you just remember this tattoo. It was of a Skeleton on his upper arm. You could describe this in detail: the eyes were blacked out, or the skeleton had a certain design/color pattern. You noticed it before when you two have been together, but now you could describe every detail. ○ You kept seeing the tattoo and this photo you have on your wall. Again, you can describe this photo in vivid detail. ● Tastes: <ul style="list-style-type: none"> ○ You remember his breath and mouth tasted like beer while he was on top of you. ○ The bitterness of the beer you were drinking. ○ Tasted the spiced beef from the Taco Bell you ate earlier. ○ The taste of your own vomit in the back of your mouth. ● Body Sensations: <ul style="list-style-type: none"> ○ Trying to get away, but frozen, couldn't move. ○ The weight of his body. ○ The pain from him crushing you, groping, etc. ○ Dryness/roughness of his hands ○ Felt outside your body
Physical and Emotional Reactions	<ul style="list-style-type: none"> ● Physical: Since the assault you have felt nauseous and light-headed, also constantly wanting to clean yourself. Having trouble eating, and recoil at times when in bed. ● Emotional: You felt outside your body, like you were watching a movie. Since that night, everything seems a little fuzzy, you've been nervous and had trouble sleeping. It's kind of like you are walking through a dream.
Most Difficult Part	<ul style="list-style-type: none"> ● You should have fought him off or run away. Thinking, maybe it's your fault. Did you want it?
Something You Cannot Forget	<ul style="list-style-type: none"> ● Feeling like you were suffocating and were going to die when he was on top of you

Special Instructions	<ul style="list-style-type: none"> • Until the interviewer acknowledges your trauma and/or pain, you should give only one or two word answers • Any judgement or “why” questions should illicit one or two word answers. • Don’t recount the assault chronologically. Not being able to remember what came first, where things started or ended is normal. Start in the middle and jump around as you “remember” pieces. • Fingering means he touched the exterior of your vagina and penetrated the interior of your vagina, but you are unwilling to describe this. You use phrases such as “down there.” However, if you are asked directly about this, you will nod or answer yes. • If the interviewer asks what the perpetrator was like, tell them he was a “nice guy” and “maybe he didn’t mean to hurt you” or “it was probably your fault” • The below table includes instructions on triggers.
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	Trigger	Breath	Vocal	Physical	Inner/Outer Life
Beat 1	Start of Simulation	Shallow, faster than normal, but trying to regulate the breath.	More clear and articulate, maybe some laughter, trying to lighten the mood.	Trying to be normal, but watchful. More regular eye contact.	Inner: Nervous, uncertain, watchful, wary. Outer: Trying to be normal.
Beat 2	Recounting the assault	Shallow and irregular. Intermittent deep breaths.	Less articulate, mumbling, softer, specifically closer to the more intimate details, maybe laughter at some points	Lack of eye contact, more fidgety and disconnected, but trying to keep it together.	Inner: Scared you won’t be believed. Confused, uncertain, not in control Outer: Disconnected, unemotional
Beat 3	Interviewer acknowledges trauma and/or pain	Slightly slower and deeper breath	Still mumbling, but taking more time to speak clearly or gather thoughts	Occasional eye contact, some fidgeting,	Inner: Slightly trusting uncertain, distant Outer: Guarded, still
Beat 4	Interviewer asks judging in tone, or “why” questions, or asks a lot of layered/ compound questions	Slow, but shallow	Low volume, terse cadence, may even ask if you can stop	Shutdown, stiff body, closed mouth	Inner: Threatened, feeling unheard, confused Outer: Guarded, distant, aggressive
Beat 5	Interviewer asks to “start at the beginning” or	Irregular and faster than normal	Not using complete sentences,	Shifting body, avoiding eye contact	Inner: Confused, Frustrated with self Outer:

	questions about “time and distance”		starting and stopping flow of ideas, vocal frustration		Frustrated with interviewer, distant
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APPENDIX F

APPENDIX F Table 1: Items included in survey scales and factor loadings

Items	Factor loadings
<i>Ask (2010) PVB ($\alpha = .89$; Eigenvalue = 4.30; Variance = 47.82%)</i>	
A crime victim's display of emotions when recalling the crime is an indicator of the accuracy of their statements.	.813
A crime victim's reluctance to spontaneously give a detailed account of the crime is an indicator of the accuracy of their statements.	.814
A crime victim who displays negative emotions (e.g., crying, despair, clear signs of distress) during his or her testimony is likely to be telling the truth.	.649
The fact that a crime victim's expressive style contradicts my expectations is generally reason to examine that statement's accuracy extra carefully.	.706
A crime victim who displays positive emotions (e.g., laughter, smiling) during his/her testimony is not likely to be telling the truth.	.853
A crime victim's inability to report details about the event shortly after the crime (less than one day) is a reason to question the accuracy of the statement.	.797
Details that appear in a crime victim's memory after a period of time are less reliable than those the victim can remember and report right from the start.	.793
△The reactions by crime victims to a violent crime differ between people with different cultural backgrounds.	-.147
△The type of relationship between the crime victim and perpetrator influences the victim's emotional expressive style and behavior.	.216
<i>△ Indicates items that were not included in the scale due to low factor loadings</i>	
<i>Payne et al. (1999) IRMA-SF ($\alpha = .89$; Eigenvalue = 7.80; Variance = 45.90%)</i>	
If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	.663
Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	.835
If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	.872
Many women secretly desire to be raped.	.752
If a woman doesn't physically fight back, you can't really say that it was rape.	.556
Men from nice middle-class homes almost never rape.	.355
Rape accusations are often used as a way of getting back at men.	.538
It is usually women who dress suggestively that are raped.	.673
If the rapist doesn't have a weapon, you really can't call it rape.	.746
Rape is unlikely to happen in the woman's own familiar neighborhood.	.415
Women tend to exaggerate how much rape affects them.	.803
A lot of women lead a man on and then they cry rape.	.764
A woman who "teases" men deserves anything that might happen.	.715
When women are raped, it's often because the way they said no was ambiguous.	.711
Men don't usually intend to force sex on a woman but sometimes they get too sexually carried away.	.659
A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	.685
Rape happens when a man's sex drive gets out of control.	.534

Adapted Schlegel et al. (2012) CWI Knowledge scale ($\alpha = .95$; Eigenvalue = 5.52; variance = 78.86%)

I know how to clearly explain the investigative process to sexual assault victims.	.927
I know how to deal with sexual assault victims' reactions to my questions about their victimization.	.920
I know how to ask a sexual assault victim for permission to ask them about their victimization.	.898
I know how to explain the next steps in the investigative process to victims of sexual assault.	.924
I know how to deal with a sexual assault victim's reaction to sensitive questions about their victimization.	.919
I know how to ask victims questions that will collect information about their victimization in a trauma-informed manner.	.898
I know how to provide victims with resources and connect them with services to facilitate victim well-being.	.710

Adapted Schlegel et al. (2012) CWI Confidence scale ($\alpha = .94$; Eigenvalue = 5.11; variance = 72.94%)

I can clearly explain the investigative process to sexual assault victims.	.905
I can deal with sexual assault victims' reactions to my questions about their victimization.	.904
I can ask a sexual assault victim for permission to ask them about their victimization.	.811
I can explain the next steps in the investigative process to sexual assault victims.	.888
I can deal with victim's reaction to sensitive questions about their victimization.	.853
I can ask victims questions that will collect information about their victimization in a trauma-informed manner.	.852
I can provide victims with resources and connect them with services to facilitate victim well-being.	.754

APPENDIX G

Simulated Interview Performance Coding Sheet

Video/audio coding sheet	Use of Victim-centered/CI techniques			
	Very poor	Poor	Good	Very good
Investigator rapport building/opening				
1. Investigator introduced him/herself to victim	1	2	3	4
2. Showed empathy toward victim (apologized for trauma, reassured vic, etc.)	1	2	3	4
3. Acknowledged victim trauma	1	2	3	4
4. Explained interview process (“I am going to ask sensitive/uncomfortable questions”/”we can stop at any time and take a break” et.)	1	2	3	4
5. Investigator assured victim this case was a priority	1	2	3	4
6. The investigator let the victim control pacing	1	2	3	4
7. Investigator asked about victim well-being (do you need anything, how are you doing, etc.)	1	2	3	4
Establishing elements of the offense	Very poor	Poor	Good	Very good
8. Identified the suspect by name	1	2	3	4
9. Established location of the crime	1	2	3	4
10. Established a timeline of the incident	1	2	3	4
11. Identified potential witnesses	1	2	3	4
12. Established the elements of the crime	1	2	3	4
13. Established lack of consent	1	2	3	4
14. Established use of force by suspect	1	2	3	4
15. Obtained information about victim injuries	1	2	3	4
16. Asked about going to hospital for SAK	1	2	3	4
17. Asked about outcry witness	1	2	3	4

Use of victim centered/cognitive interviewing	Very poor	Poor	Good	Very good
<i>18. Investigator did not interrupt victim</i>	1	2	3	4
<i>19. Investigator did not use judgement/victim blaming questions (e.g., why didn't you fight, why did you do that, clothes, etc.)</i>	1	2	3	4
<i>20. Investigator asked victim what they were able to remember</i>	1	2	3	4
<i>21. Investigator did not ask victim to start from the beginning</i>	1	2	3	4
<i>22. Investigator asked questions such as "could you tell me more about that?" and/or used encouragement throughout the interview (e.g., you are brave, you're doing great, etc.)</i>	1	2	3	4
<i>23. Investigator asked about sensory details (sight, sound, smells)</i>	1	2	3	4
<i>24. Investigator acknowledged freeze (tonic immobility) response</i>	1	2	3	4
<i>25. Investigator demonstrated active listening techniques (e.g., repeated story, engaged, etc.)</i>	1	2	3	4
<i>26. Investigator asked if he/she missed anything (e.g., "is there anything I should have asked, but didn't?", "is there anything I missed that you'd like to tell me?")</i>	1	2	3	4

Education/End of Interview/Investigative process	Very poor	Poor	Good	Very good
<i>27. Investigator provided information on victim services (e.g., advocate, counseling, etc.)</i>	1	2	3	4
<i>28. Investigator provided information on medical services (e.g., SANE, emergency room, etc.)</i>	1	2	3	4
<i>29. Investigator again acknowledged trauma</i>	1	2	3	4
<i>30. Investigator thanked victim for their time and reporting</i>	1	2	3	4
<i>31. Investigator asked if victim needed anything else</i>	1	2	3	4
<i>32. Investigator explained the next steps in the investigative process</i>	1	2	3	4
<i>33. Transition out interview</i>	1	2	3	4

Qualitative assessment of interview	
Describe briefly what the investigator did well	
Describe briefly what the investigator could have improved	

Rubric definitions	
Very good	<ul style="list-style-type: none"> Investigator asked questions/obtained information using victim centered or cognitive interviewing techniques throughout the entire interview
Good	<ul style="list-style-type: none"> Investigator asked questions/obtained information using some victim centered or cognitive interviewing techniques during parts of the interview
Poor	<ul style="list-style-type: none"> Investigator asked questions/obtained information but did not use victim centered or cognitive interviewing techniques
Very poor	<ul style="list-style-type: none"> Investigator asked questions/obtained information using traditional interrogation style investigative techniques

Overall Interview Rating	Rate the overall performance of the investigator based on the criteria below
Very good	<ul style="list-style-type: none"> Investigator asked questions/obtained information using victim centered or cognitive interviewing techniques throughout the entire interview
Good	<ul style="list-style-type: none"> Investigator asked questions/obtained information using some victim centered or cognitive interviewing techniques during parts of the interview
Poor	<ul style="list-style-type: none"> Investigator asked questions/obtained information but did not use victim centered or cognitive interviewing techniques
Very poor	<ul style="list-style-type: none"> Investigator asked questions/obtained information using traditional interrogation style investigative techniques

APPENDIX H

APPENDIX H Table 1: Items included in interview performance scales and factor loadings

Items	Factor loadings
<i>Investigator Rapport Building ($\alpha = .53$; Eigenvalue = 2.17; Variance = 30.94%)</i>	
Investigator introduced him/herself	.756
Investigator showed empathy toward victim	.769
Investigator acknowledged the victim's trauma	.320
Investigator explained the interview process	.402
Investigator assured the victim the case was a priority	.269
Investigator let the victim control the pace	.687
Investigator asked about the victim's well-being or if they needed anything	.441
<i>△ Indicates items that were not included in the scale due to low factor loadings</i>	
<i>Elements of the Offense (EOO) ($\alpha = .81$; Eigenvalue = 4.01; Variance = 40.13%)</i>	
Investigator identified the suspect's name	.539
Investigator established the location of the crime	.844
Investigator gathered information to establish a timeline of the incident	.771
Investigator identified potential witnesses	.606
Investigator established the elements of the crime	.717
Investigator established lack of consent	.769
Investigator established the suspect's use of force	.741
Investigator obtained information about victim injuries	.490
Investigator asked about obtaining a sexual assault kit	.263
Investigator asked about the outcry witness	.291
<i>△ Indicates items that were not included in the scale due to low factor loadings</i>	
<i>Use of VCTI Interview Techniques (UVCTI) ($\alpha = .71$; Eigenvalue = 2.85; variance = 35.66%)</i>	
Investigator did not interrupt the victim	.629
Investigator did not use judgement/victim blaming language	.559
Investigator asked open ended questions "what can you remember about the incident"	.648
Investigator did not ask victim to start from the beginning	.660
Investigator asked questions "could you tell me more about that"	.802
Investigator asked about sensory details	.436
Investigator acknowledged freeze response	.281
Investigator demonstrated active listening techniques	.614
<i>△ Indicates items that were not included in the scale due to low factor loadings</i>	
<i>Ending the Interview (EI) ($\alpha = .64$; Eigenvalue = 2.38; variance = 29.70%)</i>	
Investigator asked if he/she missed anything	.488
Investigator provided information on victim services	.573
Investigator provided information on medical services	.427
Investigator again acknowledged trauma	.612
Investigator asked if the victim needed anything else	.686
Investigator explained the next steps in the investigative process	.395
Investigator transitioned to a neutral topic and out of the interview	.592