

**Title:**

**Regional differences in police officer misperceptions: A quasi-experimental evaluation of sexual assault investigations training in Kentucky**

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**Abstract:** Our study fills an important research gap by investigating the differences in myths and misperceptions about sexual assault survivors among police officers (N = 388) and evaluating the effects of sexual assault investigations training across geographic regions. First, we assessed police officers' pretraining rape myth acceptance and misperceptions of crime victim reporting behaviours. Second, we used a Solomon four-group quasi-experimental design to assess pretesting effects and evaluate the effect of training and jurisdiction type on officers' adherence to rape myths and misperceptions of trauma. We used Ordinary Least Squares (OLS) models to evaluate regional differences in officers' adherence to myths and misperceptions about survivors, the main effects of training, effects of training when considering jurisdiction type, and the moderating effects of officer jurisdiction type on training outcomes. Results showed lower pretraining scores for urban/suburban officers and significant improvements in post-training scores across geographic regions. In addition, officer jurisdiction type failed to moderate – change—the relationship between training and outcomes. This research improves our understanding of officer misperceptions regarding sexual assault survivors and the impact of specialized sexual assault training in different geographic contexts.

**Keywords:** Police perceptions, Sexual assault investigation, Police training, Police jurisdiction

## Introduction

Sexual assault is a significant issue in the United States, affecting approximately 52.2 million women and 27.6 million men in their lifetime (Smith et al., 2018). It is crucial police officers respond effectively to sexual assault cases, as they hold discretionary powers in determining the progress of such cases in the legal system. However, studies have revealed some officers may adhere to rape myths (Hine & Murphy, 2019) and recent research has found the majority (64.8%) of officers assigned by their department to investigate sexual assault cases had not received previous training on sexual assault investigations or how to effectively engage with sexual assault survivors (B. Campbell et al., 2020). This lack of training and potential adherence to rape myths is problematic because officers may hold beliefs that “real rape” survivors resist physically, exhibit substantial physical injuries, promptly report the incident, display outward distress or panic, or recall precise details in a linear timeline, which can detrimentally influence officers’ responses to survivors (Alderden & Ullman, 2012; Barrett & Hamilton-Giachritsis, 2013; B. Campbell et al., 2015; Estrich, 1987). In reality, most cases reported to police do not align with these expectations (Möller et al., 2017; Morabito et al., 2019).

Such adherence to misguided expectations can have negative consequences, resulting in “secondary trauma” for survivors (R. Campbell & Raja, 1999). Secondary trauma occurs when adverse treatment by police produces trauma-related symptoms, including reduced survivor engagement with investigators (Bostaph et al., 2021), anxiety and depression (Davis et al., 2020), and post-traumatic stress disorder (PTSD) (Dworkin et al., 2017). Furthermore, officers may misinterpret PTSD symptoms (e.g., difficulty concentrating, distressing thoughts or feelings, avoidant behaviors) as indicators of deception (Ask & Landstrom, 2010) or unreliability (Maddox et al., 2012), thereby questioning survivors’ credibility and affecting decision-making

(B. Campbell et al., 2015). Consequently, failing to provide justice to survivors (Lovell et al., 2020). Recent meta-analyses have identified survivor engagement during the investigation as the most influential factor associated with arrest in sexual assault cases (Lapsey Jr. et al., 2020; Lapsey Jr. et al., 2022), emphasizing the important role of positive interactions between police and survivors.

To address these issues, some police training programs have aimed to debunk rape myths, increase knowledge about trauma-related symptoms, and enhance officer responses to survivors (B. Campbell et al., 2020; Franklin et al., 2020; Mourtgos et al., 2021). Additionally, adopting survivor-centered approaches to investigations and prioritizing survivor support may improve survivor engagement and investigative outcomes (Lorenz & Jacobsen, 2021). However, specialized training in sexual assault investigations is not mandatory in most jurisdictions, and evaluations of existing programs yielded mixed results. While some studies have reported positive outcomes (B. Campbell et al., 2020; Darwinkel et al., 2013; Franklin et al., 2020; Lathan et al., 2019; Mourtgos et al., 2021; Tidmarsh et al., 2021), others have found null (Goodman-Delahunty & Graham, 2011; Lee et al., 2012; Sleath & Bull, 2012) or short-term effects that weakened over time (Lonsway et al., 2001).

To date, however, research has not examined the potential variability in the effects of training across distinct geographic regions, such as rural, suburban, and urban areas. Scholars have recognized this understudied topic and called for further research to explore potential variation based on geographic location and cultural context (see Franklin et al., 2020; Murphy & Hine, 2019). For instance, officers in homogenous rural areas may have limited resources and training opportunities compared to officers in more diverse urban and suburban settings (Office for Victims of Crime, n.d.). These regional differences may contribute to differing perceptions of

survivors and receptiveness to specialized training. To our knowledge, no study has compared differences in rape myth acceptance and misperceptions about trauma based on geographic region nor differences on the impact of specialized training among police officers from different regions. Thus, research is needed to assess the effectiveness of specialized training on sexual assault investigations and officers' perceptions of survivors and trauma across geographic regions. Our study seeks to contribute to this body of literature by expanding on previous work focused on a 40-hour sexual assault investigations program implemented in Kentucky in 2017 (B. Campbell et al., 2021, 2022, 2023).

### **Police Response to Sexual Assault**

Sexual violence is a significant problem in the United States, as estimates indicate approximately two in five women and one in five men will experience sexual violence during their lifetime (Smith et al., 2018). Police are first to formally respond in the legal process and decide whether cases meet the legal standard of arrest. When interacting with police officers, survivors may manifest emotions and trauma differently and inconsistently with how police traditionally expect survivors to express themselves post-assault (Ask, 2010). Evidence suggests officers may misinterpret PTSD symptoms as signs of deceptions (Ask & Landstrom, 2010) or unreliability (Maddox et al., 2012), resulting in some officers questioning survivors' allegations and credibility (Bollingmo et al., 2008; B. Campbell et al., 2015) and negatively affecting officer decision-making. Indeed, misperceptions and callous responses may impact investigative effort (Jurek et al., 2021; Spohn & Tellis, 2012), discourage survivors' engagement (Lorenz & Jacobsen, 2021), and increase case attrition (R. Campbell et al., 2001; O'Neal, 2019). This is evident based on research indicating that as few as 14% (Bureau of Justice Statistics, 2018) and 17% (Morabito et al., 2019) of cases ended in arrest across multiple jurisdictions. This ultimately

denies justice to survivors and contributes to serial offenders (Lovell et al., 2020). Importantly, meta-analyses have identified survivor engagement during the investigation as the most robust factor associated with of arrest in sexual assault cases (Lapsey Jr et al., 2020; Lapsey Jr et al., 2022). This highlights the critical role of positive interactions between police and victims in the investigative process and the way in which myths and misperceptions surrounding sexual violence may adversely affect police response to survivors.

### **Rape Myths and Police Misperception of Sexual Assault Survivors**

Research has extensively examined police officers' acceptance of rape myths and misperceptions of sexual assault survivors and trauma (Page, 2010; Rich & Seffrin, 2013; Sleath & Bull, 2017; Venema, 2019). Findings indicate some officers hold negative attitudes towards rape survivors and rely on misguided survivor characteristics when assessing credibility (Sleath & Bull, 2017). These misinformed beliefs often stem from the faulty notion of "real rape," which involves perceptions about how sexual assault occurs and how survivors behave before, during, and after the assault. Expectations include prompt reporting, linear narrative accounts accompanied by emotional distress, and visible physical injuries resulting from active resistance (B. Campbell et al., 2015; Estrich, 1987; Jordan, 2004).

Research suggests cases aligning with these characteristics are more likely to be perceived as legitimate by police, while cases that do not meet these standards are less likely to end in arrest (Parratt & Pina, 2017). In addition, officers adhering to rape myths are more prone to blame survivors, less likely to hold offenders accountable (Hine & Murphy, 2019), and perceive survivors as less credible (Maddox et al., 2012). During the initial response and follow-up investigation, officers may make judgements based on survivors' behaviors and actions that do not align with traditional expectations (e.g., emotional expressiveness, hysteria, coherent

recollections). This is problematic given the traumatic effects sexual assault has on survivors and that most cases do not meet the misinformed criteria of “real rape,” posing a significant issue in police response to sexual assault (see Lonsway, 2010).

For example, sexual assault survivors commonly experience high rates of PTSD, and research on the neurobiology of trauma reveals hyperarousal and dissociative states, resulting in a diverse range of behaviors and emotions (e.g., increased agitation, avoidant behavior and withdrawal, emotional numbing, and/or flat affect) (American Psychiatric Association, 2013; Ask, 2010; Lee et al., 2001; Mason & Lodrick, 2013; Ullman & Filipas, 2001). Memories of the traumatic event may also be fragmented, consisting of sensory snapshots rather than a clear linear, sequential narrative (R. Campbell, 2012). During the assault, survivors often experience tonic immobility, a biological response by a threat or perceived threat of bodily harm that is designed to protect the individual (Marx et al., 2008, Möller et al., 2017). Tonic immobility inhibits verbal or physical resistance (Galliano et al., 1993; Marx et al., 2008), which officers may misinterpret as consent or lack of active resistance. Recent research found that up to 70% of sexual assault survivors experience tonic immobility (Möller et al., 2017). Additionally, a multi-site study that examined police report data demonstrated that 40.1% of survivors experienced visible injury, fewer than 50% verbally and/or physically resisted their attacker (46.3%), and most survivors do not report their attack to police within 1 hour (81%) (Morabito et al., 2019).

Related, previous studies have established a connection between impulsivity, a dimension of self-control, and police officers’ perceptions of sexual assault survivors. Indeed, higher levels of impulsivity have been associated with increased misperceptions of survivors and adherence to rape myth acceptance (B. Campbell & Lapsey Jr., 2021; Garza & Franklin, 2021; Franklin et al., 2021). Recent research indicates that despite this link, the effectiveness of police sexual assault

training remains unchanged by higher impulsivity (B. Campbell & Lapsey Jr., 2021). However, this relationship has not yet been assessed in the context of geographic regions.

Overall, rape myths and misconceptions contribute to officers misinterpreting survivor behaviors, questioning the truthfulness and accuracy of allegations, and undermining survivor credibility (B. Campbell et al., 2015). When credibility is questioned police are less likely to identify suspects (B. Campbell et al., 2021; Tasca et al., 2013) and investigate cases thoroughly (Jurek et al., 2021). To address these issues, advocacy organizations and police agencies have called for the creation and implementation of specialized training to educate officers about the realities of sexual assault cases and how to improve interactions with survivors.

### **Police Sexual Assault Training**

Specialized police training programs have been developed with the goal of to improving police officers' interactions with, and responses to survivors of sexual assault (B. Campbell et al., 2020, 2021; 2023; Franklin et al., 2020; McKee et al. 2020, Mourtgos et al., 2021). Survivor-centered, trauma-informed approaches and trainings prioritizing support have shown potential to improve officers' perceptions of survivors (Franklin et al., 2020) and enhance survivor engagement with investigators (Lorenz & Jacobsen, 2021; Mourtgos et al., 2021). Some evaluations of this type of training have demonstrated positive effects, such as reduced trauma misperceptions (B. Campbell & Lapsey Jr., 2021; Franklin et al., 2020), rape myth acceptance (B. Campbell et al., 2020; B. Campbell & Lapsey Jr., 2021), attribution of blame toward survivors (Darwinkel et al., 2013), and increased knowledge of trauma-informed interview techniques (B. Campbell et al., 2020; Franklin et al., 2020; Lathan et al., 2019). Evaluations have also demonstrated that trauma-informed training has enhanced officer behaviors in simulated interviews (Lonsway et al., 2001; Tidmarsh et al., 2021), actual investigations (Mourtgos et al.,

2021), and intentions to arrest (B. Campbell et al., 2023), and perceived importance using procedural justice when interacting with survivors (B. Campbell et al., 2023). Nonetheless, null (Garza & Franklin 2021; Goodman-Delahunty & Graham, 2011; Lee et al., 2012; Sleath & Bull, 2012) or short-term effects of training on officer perceptions of survivors have also been observed (Lonsway et al., 2001). Because of contextual factors, regional differences, and the geographical location of officers may contribute to the differences in outcomes of training evaluations. That said, our review of the literature identified only two studies that examined training effects by region (B. Campbell & Lapsey Jr., 2022; McKee et al., 2020).

Campbell and Lapsey Jr. (2022) used a Solomon four-group quasi-experimental design to evaluate the impact of an in-person 40-hour in-service sexual assault training program. The authors compared officers working in metropolitan statistical areas with those working in non-metropolitan statistical areas to examine the influence of geographic location on training effectiveness. They found geographic location had nonsignificant effects on officers' self-reported rape myth acceptance and perceptions of survivors' reporting behaviors. In another study, McKee et al. (2020) conducted a randomized controlled trial to assess the effects of a voluntary 4-hour in-person and online training among uniformed response officers in rural and urban locations. The results revealed significant training effects in both samples on self-reported rape myth acceptance. However, regarding female survivors, the training had a significant impact on only one of the four subscales ('she lied') within the sample of rural officers, while training significantly impacted two of the four subscales ('she lied' and 'not rape') for the sample of urban officers. Nevertheless, neither study (B. Campbell & Lapsey Jr. 2022; McKee et al., 2020) explored variation in training effects based on geographic region – such as their location in an urban, suburban, or rural jurisdiction – and therefore further research is needed to

assess potential differences in the receptiveness of training between urban, suburban and rural officers.

### **Regional Rates, Reports, Response, and Perceptions of Victims**

Cultural differences and the prevalence of gender role norms in rural areas may imply potential variation in sexual victimization across geographic regions. Findings from the National Crime Victimization Survey (NCVS) indicate higher rates of sexual victimization among individuals residing in urban regions compared to rural areas (Office for Victims of Crime, 2017, 2018). Additionally, in their examination of reported rape incidents (2003-2012) and rape arrests (2000-2012) in the contiguous 48 US states, Amin et al. (2015) observed that most geographic clusters for reported rapes were concentrated in urban areas rather than rural areas. Discrepancies in reporting practices across regions might contribute to disparities in sexual victimization rates, although a direct test of regional reporting rate variation remains absent from the literature (Kaylen & Pridemore, 2015), and existing evidence presents mixed outcomes. Notably, the Office for Victims of Crime noted higher reporting rates for rural areas in 2014, while urban areas exhibited higher reporting rates in 2015. Amin et al. (2015) argued that differential reporting could moderately account for the observed differences in reported rape across regions. Furthermore, disparities in victimization and reporting rates could potentially be shaped by demographic variations and contextual and situational factors.

For example, reporting of rape incidents in rural areas may be affected by a lack of anonymity and confidentiality in closely-knit communities, leading to fears of being “town gossip” or family and community backlash (Logan et al., 2005). Personal reasons may worsen backlash, particularly when the community and family have a positive perception of the suspect (Logan et al., 2005) or police know the suspect socially (Neame & Heenan, 2004). In such

settings, formal agencies and services may be underutilized by survivors, as communities may discourage survivors from doing so (Edwards, 2014; Foshee et al., 1998). Moreover, there may be greater tolerance for gender-based violence in rural areas, as evidence indicates a higher prevalence of intimate partner violence (IPV) convictions and continued patterns of violence among individuals in rural areas (Logan et al., 2001) and more severe and chronic IPV compared to urban residents (Edwards, 2014).

After disclosing an assault, research indicates that both rural and urban survivors encounter difficulties and barriers, although there are differences in their experiences (Logan et al., 2004, 2005). For example, rural areas are often characterized by prolonged police response times, resource and personnel constraints, and survivors perceiving their cases as low priorities (Logan et al., 2005), accompanied by limited expertise addressing sexual assault cases (Lewis, 2003). However, the overarching findings suggest that survivors from rural and urban areas confront similar challenges and obstacles following an assault.

While differences in victimization and reporting rates across geographical locations are indeed observable, these disparities change and may be influenced by demographic factors (e.g., ethnic heterogeneity, marital status, education) and contextual factors (e.g., victim-offender relationship, weapon use, presence of injuries) (Goodson & Bouffard, 2017; Rennison et al., 2012; Ruback & Meñard, 2001). For example, Goodson and Bouffard (2017) identified associations between ethnic heterogeneity, residential stability, and concentrated disadvantage with assaults across various victim-offender relationships in both metropolitan and nonmetropolitan areas. In terms of community attitudes towards sexual assault survivors, limited research indicates nonsignificant differences in rape myth acceptance or gender role attitudes based on hometown (King & Roberts, 2011) or regional residence (Burt, 1980), although one

study found larger agencies had lower levels of rape myth acceptance compared to smaller agencies (Rich & Seffrin, 2012).

Limited knowledge exists about regional variation in police officers' perceptions and their influences on responses to survivors. Given the potential differences between rural and suburban/urban areas, additional research is needed to explore potential variation in police officers' perceptions of survivors. Variations in police officer's perceptions could impact responses to survivors regionally, highlighting the need for targeted training in specific geographic locations. Identifying potential disparities can help address training deficiencies and ensure that sexual assault survivors receive evidence-based, trauma-informed care across geographic locations.

### **Current Study**

This study is a component of a larger action research project and evaluation of Kentucky's Sexual Assault Forensic Examination (SAFE) Act enacted in 2017. The SAFE act represents a legislative initiative designed to reform the response of Kentucky's criminal justice system to survivors of sexual assault, introducing several measures to enhance the treatment of survivors and processing of sexual assault cases. Importantly, the SAFE Act mandated every law enforcement agency in Kentucky assign at least one officer to complete a comprehensive 40-hour sexual assault investigations training program. This program was developed and administered by the Kentucky Department of Criminal Justice Training (KYDOCJT) and instructed by a former investigator with extensive experience in sex crimes investigations. The course curriculum covered various critical topics, including trauma-informed responses to survivors, the neurobiology of trauma, sexual assault laws, victim interviewing techniques, addressing rape myth acceptance, and investigation methods (see Appendix for the list of course

topics). The course was conducted in a face-to-face lecture format and incorporated guest lecturers, discussions, homework assignments, and assessments. Participants were also provided with a comprehensive “coursebook” containing all relevant course material.

The SAFE Act marked a significant step toward improving law enforcement responses to sexual assault cases and survivors. Previous evaluations of the KYDOCJT training program have demonstrated its effectiveness in reducing rape myths, enhancing knowledge of Kentucky’s sexual assault laws, promoting trauma-informed investigative techniques, addressing survivors’ emotional responses to trauma, increasing officers’ intention to make arrests, and emphasizing the importance of procedural justice techniques in interactions with survivors (B. Campbell et al., 2020; 2022; 2023). However, existing research and evaluations of police sexual assault training have yet to explore the potential regional impact of officer jurisdiction type on misperceptions of survivors, the effects of training when accounting for officer jurisdiction type, and the moderating effects of officer jurisdiction type on training effectiveness. This study builds on prior research and extends on previous evaluations by employing a Solomon four-group quasi-experimental design to accomplish three objectives: (1) assess differences in self-reported rape myth acceptance and misperceptions of crime victim reporting behaviors by officer jurisdiction type, (2) evaluate the effectiveness of training to improve self-reported rape myth acceptance and misperceptions of crime victim reporting behaviors while considering officer jurisdiction type, and (3) examine the moderating effects of officer jurisdiction type on the relationship between training and self-reported rape myth acceptance and misperceptions of crime victim reporting behaviors. Our study investigates six hypotheses, each addressing the impact of officer jurisdiction type and training on officers’ misperceptions:

1. Hypothesis 1: Urban/suburban officers will have significantly lower pretraining rape myth acceptance scores than rural officers.
2. Hypothesis 2: The KYDOCJT training program will significantly reduce officers' rape myth acceptance scores, regardless of jurisdiction type.
3. Hypothesis 3: Officer jurisdiction type—urban/suburban officers—will moderate the relationship between training and rape myth acceptance scores.
4. Hypothesis 4: Urban/suburban officers will have significantly lower pretraining misperceptions of victim reporting behaviors than rural officers.
5. Hypothesis 5: The KYDOCJT training program will significantly reduce misperceptions of victim reporting behaviors, regardless of jurisdiction type.
6. Hypothesis 6: Officer jurisdiction type—urban/suburban officers—will moderate the relationship between training and misperceptions of victim reporting behaviors.

## **Methodology**

### **Study design and participants**

The research participants in this study consisted of officers who were either (a) required to complete one of 11 KYDOCJT sexual assault investigation training courses or (b) completed one of 5 drug or general investigations courses between May 2017 and April 2018. A quasi-experimental Solomon four-group design, recognized as the most rigorous design for both experimental and quasi-experimental research (McGahee & Tingen, 2009), was used to remove several threats to validity (Solomon, 1949; Lanier & Briggs, 2019). The study design and schedule of survey assessments are displayed in Table 1. Officers who attended the KYDOCJT sexual assault investigations courses were randomly assigned to one of three groups: (a) Group A, consisting of five courses with pre- and post-training assessments (n = 121), (b) Group B,

consisting of three courses with post-training assessments only ( $n = 90$ ), (c) Group C, consisting of three courses with pre-training assessments only ( $n = 88$ ). Finally, the KYDOCJT also permitted access to a fourth group – Group D – consisting of five drug or general investigation courses who completed pre- and post-training assessments ( $n = 89$ ). Group A and Group B constituted the treatment group, while Group C and Group D served as the control group. The Solomon four-group design allowed for the assessment of pretesting effects comparing pre- and post-test scores within Group D and post-test scores between Group A and Group B. The absences of significant differences in these comparisons indicates that any changes in the dependent variables are attributable to training and officer jurisdiction type (Solomon, 1949).

~Insert Table 1~

### **Dependent variables**

The study assessed officers' misperceptions of survivors using two key measures. First, officers' self-reported rape myth acceptance was evaluated using the Illinois Rape Myth Acceptance-Short Form (IRMA-SF) scale (see Payne et al., 1999). This scale consists of 17 six-point Likert-type items designed to measure officers' adherence to common misconceptions about rape and sexual assault survivors. The study computed a mean IRMA-SF score by averaging officers' scores across the 17 items, with higher scores indicating greater acceptance of rape myths. This measure demonstrated excellent internal reliability ( $\alpha = .91$ ). Second, officers' knowledge of victims' emotional responses and their ability to recall crime details when reporting victimization were assessed using a Perceptions of Victim Reporting Behaviors (PVRB) scale (see Ask, 2010). The PVRB scale consists of 7 six-point Likert-type items. The study calculated a mean PVRB score by averaging officers' responses to the 7 items, with higher

scores indicating greater misperceptions of trauma. The PVRB scale exhibited strong internal reliability ( $\alpha = .81$ ).

### **Independent variables**

The study focused on the impact of two primary independent variables on outcomes. First, officer jurisdiction type was considered, with the variable dichotomized into rural = 0 and urban/suburban = 1 due to the high number of officers that indicated working in rural police agencies.<sup>1</sup> Second, officers' completion of the KYDOCJT sexual assault training course was measured as a dichotomous variable (0 = no KYDOCJT training, 1 = KYDOCJT training). Additionally, the study included several control variables: officer impulsivity, highest education level (0 = high school, 1 = two year college degree, 2 = four year college degree, 3 = graduate degree), years of police experience measured continuously, the self-reported number of sexual assault reports responded to the last year (0 = 0, 1 = 1-5, 2 = 6-10, 3 = 11-20, 4 = >20), officer sex (0 = female, 1 = male), and officer race (0 = non-White, 1 = White). Finally, because previous studies have found that impulsivity – a measure of self-control – affects police perceptions of victims (see B. Campbell & Lapsey, 2021; Franklin et al., 2020; Garza & Franklin, 2021), we included a measure of impulsivity in our multivariable models. We asked officers to rate their level of agreement on a six-point Likert-type scale. Examples of items included “I act on the spur of the moment without stopping to think” and “I do things that bring me pleasure here and now, even at the cost of some future goal.” Impulsivity was represented as a mean score comprising four items (see Grasmick et al., 1993), with higher scores representing higher levels of impulsivity, which demonstrated acceptable internal reliability ( $\alpha = .61$ ; see Ursachi et al., 2015).

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<sup>1</sup> The survey asked officers to self-select the term that best represented their jurisdiction type from categories including rural, suburban, and urban.

## Analytic strategy

The study used a systematic six-step analytic process. First, descriptive statistics for the treatment groups, control groups, and the full sample were displayed in Table 2. Second, balance tests were conducted using one-way analysis of variance (ANOVA) to assess the equivalence of the treatment and control groups regarding officer jurisdiction type, impulsivity, and demographic variables. Third, *t*-tests were used to investigate pretesting effects by comparing IRMA-SF and PVRB scores pre- and post-test within Group D and IRMA-SF and PVRB scores between Group A and Group B. Fourth, ordinary least squares (OLS) regression models were used to assess differences in officer jurisdiction type in officers' pre-test scores, thereby examining officers' misperceptions about survivors by region prior to completing the KYDOCJT sexual assault training course. Fifth, the study evaluated the effects of training on IRMA-SF and PVRB scores while accounting for officer jurisdiction type. Interaction terms were added in the sixth stage to assess whether officer jurisdiction type moderated the relationship between training and outcomes.

## Results

### Descriptive statistics

Descriptive statistics are provided in Table 2. The sample comprised 525 officers, 388 (73.9 %) turned in surveys with complete information for all variables included in the study, while 137 (26.1%) did not complete surveys<sup>2</sup>. Treatment group included 121 (31.2%) officers in Group A and 90 (23.2%) officers in Group B who completed surveys after taking the KYDOCJT

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<sup>2</sup> Using key demographic information, we examined potential differences between those who completed and those who did not complete the survey. No significant differences were detected for highest education level ( $F = .00, p = .96$ ), sex ( $F = .56, p = .46$ ), jurisdiction type ( $F = 1.07, p = .30$ ), impulsivity ( $F = 1.00, p = .318$ ), whereas the respondents had significantly less years of police experience ( $F = 9.62, p < .01$ ), fewer numbers of sexual assault reports in the last year ( $F = 9.18, p < .01$ ), and more White officers ( $F = 19.11, p < .001$ ) than the nonrespondents. However, differences found are unlikely to alter the conclusion from this study (see Pickett et al., 2018).

sexual assault investigations training program. The control groups included 88 (22.7%) officers in Group C and 89 (22.9%) officers in Group D who completed surveys but had not completed the KYDOCJT sexual assault training program. On average, officers reported 13.8 years of experience as a police officer. Officers scored an average of 2.21 on the impulsivity scale. Most officers identified as male (94%), white (96%), held at least a 2-year college degree (58.2%), and had investigated at least one report of sexual assault (65.7%) in the 12 months prior to completing the survey. Finally, in the sample, just over half of the officers indicated that they worked in a rural jurisdiction (55.2%).

### **Balance tests**

ANOVAs were conducted to determine the similarity of the treatment (Groups A and B) and control groups (Groups C and D) in terms of officer jurisdiction type, impulsivity, highest education level, years of police experience, number of sexual assault reports in the last year, officer sex, and officer race. While no significant differences were detected for officer jurisdiction ( $F = 2.29, p = .13$ ), impulsivity ( $F = .10, p = .76$ ), years of police experience ( $F = .05, p = .83$ ), and race ( $F = .37, p = .54$ ), significant differences emerged for the highest education level ( $F = 9.97, p < .001$ ), number of sexual assault reports ( $F = 7.74, p = .01$ ), and sex ( $F = 11.59, p < .001$ ). The unequal distribution of some variables prompted us to include all demographic variables in the multivariate models to control for small differences across groups.

*~Insert Table 2~*

### **Testing effects**

To assess pre-testing effects, *t*-tests were used to examine the potential impact of completing a pre-test survey on participants' responses. No significant differences were observed in pre- and post-test scores within Group D for both IRMA-SF ( $t(88) = -.47, p = .64$ ) and PVRB

( $t(68) = -1.07, p = .29$ ), nor in the post-test scores between Group A and Group B for both IRMA-SF ( $t(209) = .55, p = .59$ ) and PVRB ( $t(209) = .23, p = .82$ ). These results indicated the absence of pretesting effect, removing threats to internal validity, and indicating that any changes in the outcome variables can be attributed to the training and/or geographic location of a participants' jurisdiction.

### **Effects of Jurisdiction type on IRMA-SF and PVRB**

Pre-test scores were analyzed to examine potential regional differences between urban/suburban and rural officers based on officer jurisdiction type, and results are presented in Table 3. Model 1 revealed that officer jurisdiction type was not significantly correlated with IRMA-SF scores ( $b = -.04, p = .44, r = -.08$ )<sup>3</sup>. Officer impulsivity was the only variable significantly associated with the acceptance of rape myths ( $b = .15, p < .001, r = .24$ ). Model 2, however, showed a statistically significant and negative correlation between urban/suburban officers and PVRB scores ( $b = -.21, p = .03, r = -.15$ ). This means that officers who indicated they worked in an urban or suburban jurisdiction had significantly fewer misperceptions about trauma, and this relationship produced a small to medium effect size. Additionally, officers' highest education level ( $b = -.11, p = .03, r = -.15$ ), years of police experience ( $b = -.01, p = .01, r = -.13$ ), the number of sexual assault reports ( $b = -.10, p = .03, r = -.12$ ), and officer sex ( $b = .46, p = .02, r = .13$ ) were each correlated with PVRB scores. While Model 1 did not support Hypothesis 1, Model 2 established support for Hypothesis 4.

*~Insert Table 3~*

### **Effects of Training on IRMA-SF and PVRB**

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<sup>3</sup> Pearson's  $r$  correlations were used as effect sizes. Based on recommendations from prior research (see Gignac & Szodorai, 2016), .10 is a small effect, .20 is considered a medium effect, and .30 is considered a large effect.

Presented in Table 4 are the results from Models 3 and 5, which tested Hypothesis 2 and Hypothesis 5 and evaluated the effectiveness of the KYDOCJT training course while accounting for officer jurisdiction type. Model 3 revealed that training was statistically significant and negatively correlated with IRMA-SF scores ( $b = -.23, p < .001, r = -.25$ ). This means the training was effective at reducing officers' rape myth acceptance, and training had a medium to large effect on IRMA-SF scores. Additionally, officer impulsivity was significantly and positively correlated with IRMA-SF scores ( $b = .16, p < .001, r = .24$ ). In Model 3, officer jurisdiction type was not significantly related to IRMA-SF scores ( $b = -.03, p = .57, r = -.08$ ). Results from Model 3 showed that training significantly improved officers' IRMA-SF scores and supported Hypothesis 2.

Model 5 found training ( $b = -.24, p = .01, r = -.18$ ) and officer jurisdiction type were significantly correlated with lower levels of PVRB scores ( $b = -.20, p = .03, r = -.15$ ). However, training had the largest effect on PVRB scores. In addition, officer impulsivity ( $b = .12, p = .05, r = .13$ ), years of police experience ( $b = -.01, p = .01, r = -.13$ ), and sex ( $b = .38, p = .05, r = .13$ ) were each correlated with PVRB scores. Thus, Model 5 revealed training significantly enhanced officers' PVRB scores and supported Hypothesis 5.

### **Moderating Effects of Jurisdiction Type on Training**

To test Hypothesis 3 and Hypothesis 6, to determine if jurisdiction type moderated – or changed – the relationship between training and outcomes, interaction terms were included in Models 4 and 6. Model 4, which included Training X Officer Jurisdiction interaction term, allowed for the evaluation of the moderating effects of officer jurisdiction type on the impact of training on IRMA-SF scores. Presented in Table 4, results from Model 4 revealed that the interaction between officer jurisdiction type and training was not significantly correlated with

IRMA-SF scores ( $b = .04, p = .68, r = -.17$ ). Training remained significantly correlated with lower IRMA-SF scores ( $b = -.25, p < .001, r = -.25$ ), while the association with officer jurisdiction type remained nonsignificant ( $b = -.05, p = .49, r = -.08$ ). Consequently, Model 4 did not provide support for Hypothesis 3.

Model 6 added the Training X Officer Jurisdiction interaction term and examined whether officer jurisdiction type significantly moderated – or changed – the relationship between training and PVRB scores. Model 6 showed that the interaction between training and officer jurisdiction was not significantly correlated with PVRB scores ( $b = -.03, p = .88, r = -.19$ ). Training remained marginally significant and correlated with lower PVRB scores ( $b = -.23, p = .06, r = -.18$ ), and officer jurisdiction type was not significantly correlated with PVRB scores ( $b = -.18, p = .19, r = -.15$ ). As such, Model 6 provided support for Hypothesis 6.

*~Insert Table 3~*

### **Discussion**

Scholars have called for additional research into officer perceptions across geographic regions (see Franklin et al., 2020; Murphy & Hine, 2019). As such, our study expanded on previous work (B. Campbell et al., 2020, 2021 2023) and explored police officers' misperceptions regarding survivors of sexual assault. Specifically, by comparing urban/suburban and rural officers in Kentucky, we (1) explore rape myth acceptance and misperceptions of trauma across geographic regions, (2) assess the effectiveness of a specialized sexual assault investigations training program to improve perceptions of survivors, and (3) examine whether geographic location moderates – or changes – the relationship between training and myths and misperceptions of sexual assault survivors. This research advances our understanding of officers' misperceptions and the impact of sexual assault training effectiveness in three ways.

First, the study addresses a gap in the existing literature by investigating regional differences in police officers' rape myth acceptance and misperceptions about trauma, comparing urban/suburban to rural officers (see Franklin et al., 2020; Murphy & Hine, 2019). Notably, prior to training, the study found that Hypothesis 1 was not supported as officers' jurisdiction type was not significantly correlated with their acceptance of rape myths. This contradicts previous research suggesting that smaller police agencies endorse greater rape myths (Rich & Seffrin, 2012) and implies that such misperceptions may not be limited to specific regions but influenced by contextual factors within the community. Furthermore, this study found support for Hypothesis 4, indicating that rural officers maintained greater misperceptions about trauma compared to their urban/suburban counterparts, even after completing the sexual assault investigations training program. This suggests that geographic location, as shown in prior studies (Burt, 1980; King & Roberts, 2011), may play a role in shaping officers' misperceptions related to trauma. Based on these findings, statewide training initiatives may need to prioritize offering training programs to rural areas with limited resources. Tailoring training delivery by jurisdiction location may improve responses to survivors in rural areas that may not readily have access to training programming. This could involve conducting a training needs assessment in rural jurisdictions and tailoring training programs according to varying lengths, content, and delivery method (e.g., online modules, in-person), and adapted to different ranks and roles within the agency.

Second, findings support and extend the literature review's discussion on the effectiveness of training programs. The literature review mentioned mixed results of training evaluations and the need for further research to assess regional differences. Our study found support for Hypothesis 2 and Hypothesis 5 as the training program had a significant impact on

reducing rape myth acceptance and improving misperceptions about trauma, regardless of the officers' geographic region. This suggests that the training was effective across different regions, aligning with some studies reporting positive outcomes of training programs when comparing rural and urban locations (McKee et al., 2020) and metropolitan statistical areas and non-metropolitan statistical areas (B. Campbell & Lapsey Jr., 2022), emphasizing the importance of survivor-centered trauma-informed training programs (B. Campbell et al., 2020; Franklin et al., 2020; Lathan et al., 2019; Mourtgos et al., 2021).

Third, findings add to the literature by demonstrating a lack of interaction effect between training and officer jurisdiction type. Indeed, Hypothesis 3 was not supported based on the finding that officer jurisdiction type did not significantly moderate – or change – the relationship between training and rape myth acceptance. The findings suggests that the effectiveness of specialized sexual assault training in reducing officers' rape myth acceptance is consistent across both urban/suburban and rural settings, indicating such training may produce positive outcomes for officers across diverse geographic areas. Similarly, Hypothesis 6 was also not supported, as findings indicated that officer jurisdiction type did not significantly moderate – or change – the impact of training on misperceptions of victim reporting behaviors. Specialized training was thus effective in reducing rape myth acceptance and improving misperceptions about trauma among officers in both urban/suburban and rural areas. This implies that training may help improve officers' understanding of the traumatic responses from sexual assault survivors, regardless of their geographic context. Furthermore, even with evidence suggesting high impulsivity robustly predicts misperceptions of sexual assault survivors and adherence to rape myths (B. Campbell & Lapsey Jr., 2021; Franklin et al., 2020), training markedly improved both outcomes.

The findings of this study have several policy implications. They emphasize the importance of implementing standardized and survivor-centered training programs for police officers, ensuring that they receive comprehensive training in sexual assault investigations, rape myths, and trauma-informed approaches across geographic locations. These programs should incorporate debunking rape myths, recognizing trauma responses, and encouraging resources and support for survivors. Policymakers should consider funding initiatives to extend the reach of these training programs to more officers, especially those in rural areas, where resources and opportunities may be limited (Lewis et al., 2003; Office for Victims of Crime, n.d.). Promoting training opportunities in rural regions is needed to create a more standardized and enhanced response to sexual assault across different areas.

Despite these contributions, this study is not without limitations. The study relied on self-reported data, which may be subject to biases, including social desirability effect (see Sleath & Bull, 2012). However, the Solomon four-group design and assessment of testing effects helps mitigate the likelihood of bias. Studying actual officer behaviors, as opposed to relying on perceptions, has significant implications for future research by validating self-reported beliefs and attitudes and assessing real-world impacts on individuals and communities. Future research should attempt to shift the focus from what officers believe or say to what they do in practice, offering a more comprehensive and actionable understanding of law enforcement practices and their impact. Doing so would provide valuable research for the development of effective policies and procedures. Recent work by Mourtgos and colleagues (2021) has demonstrated that training can improve victim engagement with police officers. More research should replicate their work in different jurisdictions and training environments.

The study was limited in its information about the urban/suburban counties, which warrants consideration. Research suggests demographic and context factors may influence victimization and reporting rates (Goodson & Bouffard, 2017; Rennison et al., 2013; Ruback & Meñard, 2001). Thus, future research should investigate additional contextual factors and diversity within urban/suburban and rural counties that may influence officers' misperceptions. Factors such as population size, community characteristics, and police agency resources may contribute to officer misperceptions and receptiveness to training. Another limitation is that 26.1% of officers did not complete the survey. Nonetheless, the response rate exceeds the average for studies using police samples (see Nix et al., 2017) and is unlikely to affect the study's conclusion (see Pickett et al., 2018).

Even with these limitations, this study highlights the significance of a specialized training programs in reducing officers' rape myth acceptance and improving misperceptions about victim reporting behaviors. The study found training can be effective in promoting survivor-centered approaches among police officers in both urban/suburban and rural areas. While differences in pre- and post-training perceptions were observed in PVRB scores based on geographic location, these differences were mitigated by training. These findings offer valuable insights into the role of training in shaping police officers' perceptions and the need for ongoing efforts to standardize and enhance training programs in sexual assault investigations.

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## Appendix

**Table 5**

*Kentucky Department of Criminal Justice Training sexual assault investigations course topics*

Orientation (1 hr)	Victim impact (2 hrs)
Cultural myths and misconceptions (1 hr)	Community coordinated response (4 hrs)
Model law enforcement response (1 hr)	Response to special communities (1.5 hrs)
Law and investigative strategy (4 hrs)	Offender dynamics (4 hrs)
DNA evidence (1 hr)	Victim interviewing (3 hrs)
Preliminary investigation (4 hrs)	Course critique (0.5 hr)
Unfounded cases (3 hrs)	Outside assignments (4 hrs)
<i>Course total = 40 hrs</i>	

**Table 1**

*Quasi-experimental Solomon 4-group design and survey assessments (N = 388).*

	Treatment Groups n = 211		Control Groups n = 177	
	A (n = 121)	B (n = 90)	C (n = 88)	D (n = 89)
Pre-test survey	X	–	–	X
Sexual Assault Training	Yes	Yes	No	No
Post-test survey	X	X	X	X
Follow-up survey	X	X	X	–

**Table 2***Descriptive Statistics for Treatment Group, Control Group, and Full Sample (N=388)*

	Treatment Groups		Control Groups		Full Sample N = 388 n(%)
	A n = 121 n(%)	B n = 90 n(%)	C n = 88 n (%)	D n = 89 n(%)	
Urban/Suburban					
Yes	58	44	36	36	174 (44.8)
No	63	46	52	53	214 (55.2)
Training					
Yes	121	90	-	-	211 (54.4)
No	-	-	88	89	177 (45.6)
Impulsivity ( $\mu$ )	2.29	2.13	2.11	2.28	2.21
Education*					
High school	48	29	47	38	162 (41.8)
Two years	26	18	20	24	88 (22.7)
Four years	43	38	18	27	126 (32.5)
Graduate	4	5	3	-	12 (3.1)
Years police ( $\mu$ )	13.73	13.76	14.07	13.8	13.8
# of reports*					
0	36	22	38	37	133 (34.3)
1-5	56	47	29	43	175 (45.1)
6-10	12	15	11	6	44 (11.3)
11-20	8	3	7	2	20 (5.2)
>20	9	3	3	1	16 (4.1)
Male ( $\mu$ )*	.91	.89	.97	.99	.94
White ( $\mu$ )	.95	.99	.97	.94	.96

Notes.  $\mu$  indicates number displayed is an average. \*Significant differences detected.

**Table 3**

*OLS Models Predicting the Impact of Agency Jurisdiction Type and Impulsivity on Officer Pre-test IRMA-SF and PVRB Scores*

	Model 1 (IRMA-SF)				Model 2 (PVRB)			
	<i>b</i>	<i>se</i>	<i>p</i>	<i>r</i>	<i>b</i>	<i>se</i>	<i>p</i>	<i>r</i>
Urban/Suburban	-.04	.05	.44	-.08	-.21	.09	.03	-.15
Impulsivity	.15	.04	.00	.24	.12	.06	.06	.14
Education	-.05	.03	.10	-.11	-.11	.05	.03	-.15
Years police	-.00	.00	.26	-.09	-.01	.01	.01	-.13
# of reports	-.03	.03	.26	-.07	-.10	.05	.03	-.12
Male	.19	.10	.07	.10	.46	.19	.02	.13
White	-.09	.13	.49	-.04	-.03	.23	.90	-.01
Constant	1.24	.20	.00		2.79	.36	.00	
<i>F</i>	5.06				5.56			
<i>R</i> <sup>2</sup>	.07				.08			

*Note.* Unstandardized coefficients (*b*), standard errors (*se*), *p*-value (*p*), Pearson correlation (*r*), and adjusted *R*<sup>2</sup>.

**Table 4***The Moderating Effects of Officer Jurisdiction Type on Training and IRMA-SF and PVRB*

	Model 3 (IRMA-SF)				Model 4 (IRMA-SF)			
	<i>b</i>	<i>se</i>	<i>p</i>	<i>r</i>	<i>b</i>	<i>se</i>	<i>p</i>	<i>r</i>
Urban/Suburban	-.03	.05	.57	-.08	-.05	.07	.49	-.08
Training	-.23	.05	.00	-.25	-.25	.07	.00	-.25
Train*Urb/Sub	-	-	-	-	.04	.10	.68	-.17
Impulsivity	.16	.03	.00	.24	.16	.03	.00	.24
Education	-.03	.03	.28	-.11	-.03	.03	.28	-.11
Years police	-.00	.00	.30	-.09	-.00	.00	.31	-.09
# of reports	-.01	.03	.58	-.07	-.01	.03	.58	-.07
Male	.11	.10	.29	.10	.11	.10	.27	.10
White	-.07	.13	.56	-.04	-.07	.13	.57	-.04
Constant	1.35	.20	.00		1.36	.20	.00	
<i>F</i>	7.34				6.53			
<i>R</i> <sup>2</sup>	.12				.11			

  

	Model 5 (PVRB)				Model 6 (PVRB)			
	<i>b</i>	<i>se</i>	<i>p</i>	<i>r</i>	<i>b</i>	<i>se</i>	<i>p</i>	<i>r</i>
Urban/Suburban	-.20	.09	.03	-.15	-.18	.14	.19	-.15
Training	-.24	.09	.01	-.18	-.23	.12	.06	-.18
Train*Urb/Sub	-	-	-	-	-.03	.18	.88	-.19
Impulsivity	.12	.06	.05	.14	.12	.06	.05	.14
Education	-.09	.05	.06	-.15	-.09	.05	.07	-.15
Years police	-.01	.01	.01	-.13	-.01	.01	.01	-.13
# of reports	-.08	.05	.07	-.12	-.08	.05	.07	-.12
Male	.38	.19	.05	.13	.38	.19	.05	.13
White	-.01	.23	.96	-.01	-.01	.23	.95	-.01
Constant	2.90	.36	.00		2.90	.37	.00	
<i>F</i>	5.79				5.14			
<i>R</i> <sup>2</sup>	.09				.09			

*Notes.* Unstandardized coefficients (*b*), standard errors (*se*), *p*-value (*p*), Pearson correlation (*r*), and adjusted *R*<sup>2</sup>.