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Why Sexual Assault Kits Were Not Tested: A Systematic Review

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ABSTRACT AND ARTICLE INFORMATION

As a systemic practice, law enforcement across jurisdictions nationwide have not submitted hundreds of thousands of collected sexual assault kits for forensic DNA testing over the past several decades. It is critical to understand why police have been setting aside this valuable evidence, as DNA is a unique and powerful criminal justice tool that can help identify suspects, uncover serial offenders, and exonerate the wrongly convicted. The growing body of research tackling this issue has been largely fragmented by locality and sample, leaving a limited understanding of shared and divergent findings across jurisdictions. Drawing from a body of 16 research articles from 2004 through 2021, the present study brings together findings that span samples and locales to illuminate connections across data that paint a more cohesive picture of how the systemic practice of not submitting sexual assault kits for forensic DNA testing occurred. Through a systematic literature review, it is revealed that research in this area is not dichotomized between decision-making by police based on either practical concerns or extralegal factors, but, rather, it comes together to tell a complex story of why SAKs remained unsubmitted for forensic testing throughout the criminal justice system as a consequence of shared responsibility across several disciplines and how researchers shape this story through the methodological choices they make. Practical multidisciplinary policy considerations are discussed.

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Every 68 seconds someone is sexually assaulted in the United States (Rape, Abuse & Incest National Network [RAINN], 2022). Sexual assault is a social problem, public health issue, and a violent crime that, if reported, can involve a wide range of responses from the criminal justice system. One common response by law enforcement is the use of an evidence collection toolkit designed specifically for sexual assault investigations: a sexual assault kit. A sexual assault kit (SAK), or rape kit, is a set of supplies utilized by a medical professional to gather and preserve physical and biological evidence from the victim's body following the report of sexual assault (End the Backlog, 2020). Evidence collected with SAKs can be submitted by law enforcement to a crime lab for forensic DNA testing. DNA is precise, reliable, and impartial forensic evidence that can aid sexual assault investigations and prosecutions by identifying suspects, revealing serial offenders, exonerating the wrongly accused, and corroborating accounts of sexual assault survivors (National Institute of Justice [NIJ], 2015).

Though the SAK has served as an innovative and invaluable mechanism with which to collect and preserve forensic evidence since 1978, its potential has been stymied by the systemic stockpiling of completed but untested kits. The magnitude and regional scope of untested SAKs in the United States is a widespread problem throughout the criminal justice system. Extensive media coverage has prompted cities, counties, and states to assess this issue in their jurisdictions, revealing a growing number law enforcement agencies with large numbers of unsubmitted SAKs (R. Campbell, Feeney, et al., 2017). Estimates have indicated that there are 300,000 to 400,000 untested kits nationwide (Strom et al., 2021), some over 30 years old (R. Campbell, Fehler-Cabral, et al., 2017). Those affected by sexual violence count on the criminal justice system to investigate these crimes and hold offenders accountable. The consequences of untested SAKs are profound: victims are denied justice and healing, the wrongly convicted remain imprisoned, and perpetrators remain a threat to public safety (R. Campbell, Shaw, & Fehler-Cabral, 2015). When the system tasked with protection causes further harm to those it serves, intensive analysis and careful rectification are needed.

Drawing on extant research, this paper will examine how the accumulation of untested sexual assault kits occurred across the criminal justice system. The issue of untested kits will be examined through a systematic literature review to bring together findings that span samples and locales to illuminate connections across data and paint a more cohesive picture of how the systemic practice of not submitting SAKs for forensic DNA testing occurred across jurisdictions. The range of sampling selections and techniques, data sources, locales, methodologies, analyses, theories utilized, and findings are identified and evaluated across studies. Further, the methodological strengths and limitations in this empirical body of research are discussed. The purpose of this study is to examine the existing body of prior research on this topic as a whole, in order to provide data that may be used to catalyze and inform the criminal justice system's response to the systemic issue of untested SAKs and to guide future research on this issue by identifying strengths and gaps in the literature. Through a systematic examination of how explanations of the untested SAK dilemma are conceptualized, theorized, measured, and discussed, this research may reveal a more rich and nuanced narrative that can contribute to ongoing public discussion and perhaps inform future reforms. Practical multidisciplinary policy considerations are discussed.

Literature Review

The Sexual Assault Kit

The sexual assault kit is unique because the victim's body is treated as the crime scene from which evidence of the perpetrator is collected (NIJ, 2015). SAKs can be used for male, female, and adolescent victims (NIJ, 2015). Kit contents vary widely by jurisdiction (Alptraum, 2020) but typically include tools such as combs, microscopic slides, test tubes, collection envelopes, and swabs, which are utilized to collect hair, saliva, blood, semen, urine, and skin cells from the genitals, anus, mouth, breasts, and other body parts (NIJ, 2015). Additionally, fingernail scrapings may be taken, injuries may be photographed, and the victim's clothing may be collected (R. Campbell, Feeney, et al., 2017). This process can last several hours and is highly physically invasive; however, it is typically coupled with medical treatment for injuries, testing for sexually transmitted diseases, prescription of emergency contraception, and a referral to mental health services, though this care varies by medical facility (NIJ, 2015). This medico-legal examination is typically performed by a sexual assault nurse examiner (SANE) who has specialized training in forensic exams and managing the psychological trauma of sexual assault (Corrigan, 2013; Morse, 2018).

Upon collection, the SAK is transferred from the medical facility to police who then have the option to place it evidence storage or send it to a crime lab for forensic testing (NIJ, 2015). If tested, foreign DNA may be detected, which may help identify a suspect

(NIJ, 2015). DNA is a unique "genetic fingerprint" specific to an individual that can indicate their presence at a crime scene or physical contact with the victim (Wambaugh, 1989). DNA profiles identified in this process can be uploaded to the Combined DNA Index System (CODIS), a national forensic DNA database, and matched to reference DNA profiles of both known and unknown subjects, obtained from offenders and crime scenes (Federal Bureau of Investigation, n.d.). If tested, DNA may lead to an arrest and prosecution. Discretion regarding when and whether to submit a SAK for testing lies with police. Unbeknownst to many, sexual assault survivors were undergoing SAK evidence collection only to find out that police agencies were shelving their untested kits by the hundreds of thousands.

Discovery, Magnitude, and Scope of Untested Sexual Assault Kits

New York City was among the first jurisdictions reported to have alarming numbers of untested SAKs in 1999 when officials revealed they had nearly 16,000 untested SAKs in their possession (Human Rights Watch, 2009). Subsequently, Los Angeles was revealed to have approximately 12,000 untested SAKs stockpiled in storage in 2008 (Human Rights Watch, 2009; Peterson et al., 2012). Next, a 2009 discovery of a massive warehouse in Detroit that police were utilizing to store over 11,000 untested sexual assault kits spanning 30 years proved pivotal (R. Campbell, Fehler-Cabral, et al., 2017). This hot, musty warehouse with broken windows and birds living inside "became a powerful symbol of police negligence" (Hagerty, 2019, p. 3). Widespread media coverage of this discovery prompted other cities and states to assess this issue in their own jurisdictions, which revealed a growing number of law enforcement agencies with large numbers of SAKs that had never been submitted for testing (R. Campbell, Feeney, et al., 2017). A glimpse into the inventories of a few major U.S. cities illuminates the magnitude and scope of the unsubmitted kits: Memphis discovered over 12,000 (End the Backlog, n.d.), Cleveland counted nearly 7,000 (End the Backlog, n.d.), Houston found more than 6,000 (Banks, 2020), and Dallas uncovered approximately 4,000 untested SAKs ("Dallas has the Largest Backlog," 2021). Though scores of jurisdictions still have yet to inventory their untested kits, research has revealed consistent practices across both urban and smaller communities (R. Campbell, Feeney, et al., 2017).

Not only were these SAKs not tested, but most were not *submitted* for testing, an important distinction as 'untested' implies a backlog in which kits have been submitted for and are awaiting testing at the crime lab. Though crime lab backlogs did occur, most SAKs had never been submitted to crime labs in the first place (NIJ, 2015). Countless other kits were lost or destroyed, some before the statute of limitations tolled (Human Rights Watch, 2009). This routine practice common to jurisdictions nationwide manifested over an approximate span of 30 years in the complex and evolving sociohistorical context of policing, technology, science, economy, politics, and rise of the victim (Garland, 2001).

Factors Inhibiting SAK Submissions

As police bear responsibility for submitting SAKs to crime labs for forensic DNA testing that could lead to the identification, arrest, and prosecution of an offender, yet routinely opt not to do so, a growing body of research has explored why this occurs in order to better understand this phenomenon and proffer informed considerations. As leading scholars on this subject, R. Campbell and Fehler-Cabral (2018) expertly distill the extant research into two distinct but interrelated categories of explanations that account for police decisions not to submit SAKs for testing: *police practices for forensic testing of crime scene evidence* and *police practices in sexual assault investigations*. The first emphasizes the role of resource constraints and the value (or lack thereof) placed on DNA evidence in decisions not to test SAKs, whereas the latter suggests preconceived notions of rape paradigms influence SAK testing decisions. Building upon these distinctions, this author identifies decision-making by police based on matters of *practical concern*, such as perceived utility of evidence and resource constraints, and consideration of *extralegal factors* by police, such as case circumstances and victim characteristics that reinforce biases and rape myths within discretionary decision-making in sexual assault investigations.

Practical Concerns

When the innovation of the SAK emerged in the late 1970s, limited technological and scientific capabilities and resource scarcity initially hindered SAK testing (R. Campbell, Fehler-Cabral, et al., 2017). In the late 1970s and early 1980s, before the ability to analyze DNA existed, testing evidence from SAKs was limited to serology (i.e., blood-type testing), racial hair typing, and fiber matching to confirm the identity of a known suspect, and items such as torn clothing and photos of injuries were used to show use of force (Dickson, 2014). Therefore, cases with suspects whose identities were unknown often had little or no use for SAK evidence as there was no ability to test DNA, nor a database within which to match the biological evidence to a suspect. Barriers to SAK testing were further exacerbated by high testing costs and fiscal limitations.

Many police departments cited expensive testing costs and limited resources as critical reasons that SAK testing was neglected for so long and in such great numbers (R. Campbell & Fehler-Cabral, 2018; R. Campbell, Fehler-Cabral, et al., 2015; Hendrix et al., 2020; Peterson et al., 2012; Strom & Hickman, 2010). From the inception of the SAK in the late 1970s through the late 1990s, testing of an individual kit cost approximately $5000 (Hagerty, 2019). Accordingly, testing every collected kit was cost-prohibitive, so police utilized discretion in determining which SAKs to test, opting much of the time to test only SAKs that they were confident would result in an arrest and conviction (Dickson, 2014).

In the 1990s, the emergence of forensic DNA testing and CODIS, a national forensic DNA database, vastly increased the utility of SAK evidence to sexual assault investigations. Suspect DNA identified through forensic testing could now be uploaded to CODIS, which contains reference DNA profiles of both known and unknown subjects obtained from offenders and crime scenes. As a result, suspect DNA from SAKs now had the potential to be identified upon testing and entry into CODIS (Berson, 2009). Even more, testing costs had dropped to $500-1700 a kit by the early 2000s (Dickson, 2014; Wang & Wein, 2018). On their face, these changes would appear to greatly increase the value of SAKs to police investigations.

Affirming the fiscal value of testing SAKs, Wang and Wein (2018) determined that, by the most conservative estimate, every dollar spent on the analysis of a SAK returns $81 from averted future sexual assaults. If a conviction is obtained, roughly $11.4 million in future costs can be avoided (Wang & Wein, 2018). Similarly, Davis and Wells (2019) examined sexual assault cold cases from Denver to determine if SAK DNA testing is a cost-effective criminal justice strategy. They, too, found that, based on the most conservative estimate, it is highly cost-effective to test SAK forensic evidence in sexual assault cold cases that have a CODIS hit when compared to the estimated sexual assault costs for victims, the criminal justice system, and society. Moreover, as criminal behavior is both unique and universal at once (Helfgott & Wallenborn, 2022), serial rapists (who can be identified with DNA matches across cases) are far more common that many experts previously thought (R. Campbell et al., 2018) and when uncaught, continue to commit crimes not only costly to human life and well-being but fiscally costly to the criminal justice system. However, despite these momentous scientific and technological advances, most kits were still not sent for testing while SAKs continued to accumulate at an alarming pace (R. Campbell, Fehler-Cabral, et al., 2017). Thus, the notion that that SAKs were not useful to investigations may have persisted among police despite meaningful scientific and technological strides.

An additional practical police concern entailed the consent versus identity paradigm. Some investigators limited SAK testing to cases in which only suspect identity was at issue (Human Rights Watch, 2009, 2010, 2013), as suspects may assert a consensual sex defense to explain why their DNA is present on the victim (Æquitas, 2017). In this instance, police may consider the issue of suspect identity resolved, shifting the issue to one of consent, which would not be resolved by DNA testing (Dickson, 2014).

Nevertheless, as the new millennium took hold, a growing awareness emerged that untested SAKs were a pervasive problem across jurisdictions nationwide. In turn, sexual assault survivors, advocates, and public officials leveraged local and national news media coverage to cultivate greater public awareness and to mobilize sweeping reforms (Quinlan, 2020). Meanwhile, researchers dug deeper into this phenomenon to uncover additional and far more complex underlying factors inhibiting SAKs from being submitted for testing.

Extralegal Factors

Police wield extraordinary discretion in criminal investigations (National Research Council, 2004). In sexual assault cases, in particular, they routinely make judgments about the credibility of victims and process information accordingly, which can be problematic in the investigation and processing of such cases (National Research Council, 2004). Moreover, research examining victim and case features have revealed that extralegal characteristics affect whether or not SAKs are submitted for testing (Patterson & Campbell, 2012; Shaw & Campbell, 2013; Valentine et al., 2019). Research indicates that police distrust of sexual assault victims, victim-blaming practices, and adherence to biases and rape myths, have played a key role in decisions not to submit SAKs for testing (R. Campbell, Fehler-Cabral, et al., 2015).

When investigating crimes of sexual assault, police routinely assess victim credibility. Research has reported that police use a variety of victim characteristics (e.g., age, gender, race/ethnicity, and socioeconomic status) and case circumstances (e.g., victim relationship to the suspect and victim behavior prior, during, and after the assault) to assess victim credibility in sexual assault cases (Frohmann, 1997; Jordan, 2004; Kaiser et al., 2017; Kelley & Campbell, 2013; Morabito et al. 2016; Murphy et al., 2014; Schwartz, 2010; Spohn & Tellis, 2011; Spohn et al., 2014; Tasca et al., 2013; Venema, 2016). Lines of inquiry about what a victim was wearing, why a victim

was at a particular location, if they were drinking or using drugs, and what they did to stop the assault infer that the victim bears responsibility for what happened to them, that they could have taken steps to prevent sexual victimization, or that it was not a "real" rape (Shaw et al., 2016). Police consider whether such features align with sexual assault stereotypes and subsequently process or close case investigations based on these determinations (Spohn et al., 2001). In fact, before the 1980s, it was common for police to subject sexual assault victims to psychiatric evaluations or polygraphs to confirm victimization (Shelby, 2018). Beyond credibility, lack of victim cooperation with an investigation has also been cited as a reason police choose not to submit SAKs for testing (Kaiser et al., 2017; Spohn & Tellis, 2010). However, when police label victims as uncooperative, this can be problematic as victims may disengage with the criminal justice system based on harsh or negative treatment by law enforcement during the investigation process (Murphy et al., 2014; Shaw et al., 2017; Spohn & Tellis, 2011; Tasca et al., 2013). Specifically, repeated questions, accusations of lying, and threats of criminal prosecution for not being truthful are conduct by police that may contribute to why sexual assault victims become "uncooperative" (Human Rights Watch, 2013; Spohn & Tellis, 2011).

Certain sexual assault victims may face intensified scrutiny from police based on extralegal factors such as gender, race, and socioeconomic status. With a structure steeped in privilege, the criminal justice system has long been an apparatus of unjust and excessive use of power against ethnic minorities, women, and the poor (Alexander, 2020; Frohmann, 1997; Kraska & Brent, 2011; Naffine, 1996). SAK research reveals that police have exhibited distrust of victims who are ethnic minorities, poor, have a criminal history, and those believed to be sex workers (R. Campbell, Fehler-Cabral, et al., 2015). In Detroit, written police reports that were linked to untested SAKs explicitly referred to some sexual assault victims by derogatory terms such as "ho" and "heffer [sic]" (R. Campbell & Fehler-Cabral, 2018, p. 90, 93). In San Francisco, police routinely searched a database that included DNA collected from SAKs, in order to identify survivors as *suspects* in other crimes (Romo, 2022). They recently charged a sexual assault survivor with a property crime using her own SAK as the method of identification for her as a suspect (Romo, 2022). In the case of a Black woman raped in Cleveland, police tested her SAK not for biological evidence of the rapist, but for drugs in *her* system (Hagerty, 2019). When Cleveland eventually undertook large-scale SAK testing in 2011, her kit was finally tested for suspect DNA, revealing that her perpetrator was a serial rapist and murderer who had buried 11 bodies on his property, now known as the Cleveland Strangler (Hagerty, 2019).

Importantly, both practical and extralegal factors alike embody myopic reasoning that underestimates the value of DNA to affirm the victim's account, to uncover lies and inconsistencies in a suspect's story, and to reveal serial offenders across cases. These explanations likewise disregard the prosecutorial value of DNA to bolster testimony at trial, as jurors have now come to expect DNA evidence in order to reach a conviction (Podlas, 2006). Moreover, SAK testing can help survivors through the healing process and corroborate their experience. As a harbinger of deeply entrenched criminal justice issues, the matter of untested SAKs shed light on the systemic issue of the inequitable dispensation of justice.

Present Study

Although certain broad conclusions, such as the aforementioned, can be drawn from the extant research, ultimately, the literature that examines explanations for untested SAKs has been largely fragmented by locality and sample, leaving a limited understanding of shared and divergent findings across jurisdictions. Scant national studies have devoted attention to untested forensic evidence, and even fewer to sexual assault kits specifically. Beyond the national level, a growing number of states, counties, and cities have undertaken studies that examine the explanations behind untested SAKs, many doing so in conjunction with federal grants funding the testing of such kits. However, the findings of such studies remain siloed from one another.

As the issue of untested sexual assault kits continues to affect jurisdictions nationwide and the body of research has grown, a systematic literature review is warranted to identify, evaluate, and synthesize the extant research in order to empirically inform policy. Drawing from a body of 16 research articles from 2004 through 2021, the present study brings together findings that span samples, locales, and methodologies to illuminate connections across data that paint a more cohesive picture of how the systemic practice of not submitting sexual assault kits for forensic DNA testing has occurred.

Method

The intention of this systematic literature review is to examine prior research on the nationwide issue of untested sexual assault kits within the criminal justice system to uncover the most salient findings identified in the research concerning why this occurred. Further, the range of research designs and theories utilized will be identified and evaluated across studies. The studies included in this paper were

sourced from searchable library and online databases. To mitigate database bias, four databases that are diversified across disciplines that intersect with criminal justice were utilized. Specifically, the author searched Research Library (ProQuest), Academic Search Complete (Ebsco), PsychINFO, and Criminal Justice Abstracts with Full Text. The various keywords utilized were "sexual assault kit," "rape kit," "untested," and "backlog." These terms were searched both individually and in string search combinations with one another. Each of the academic article searches was performed through the Seattle University online library system.

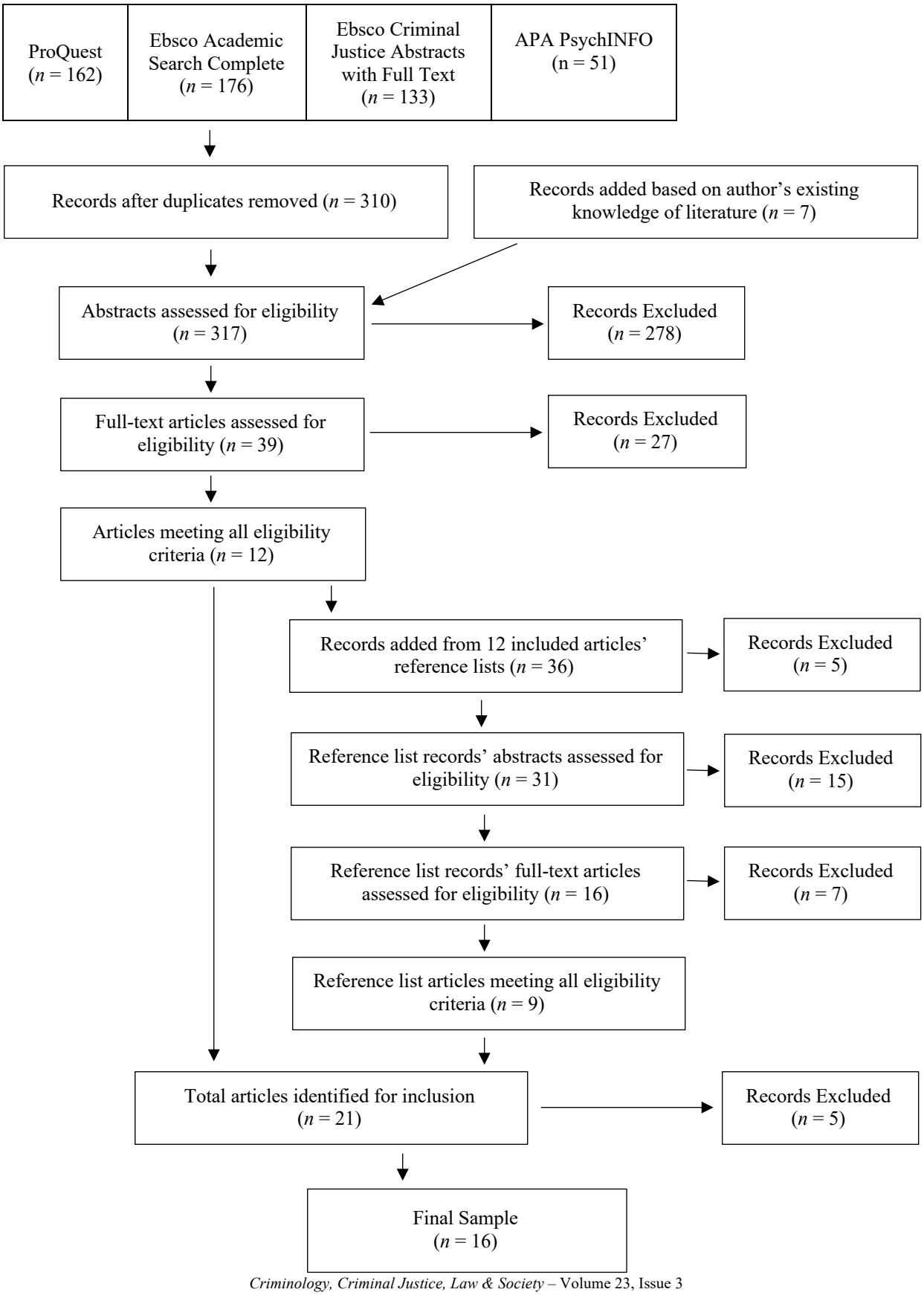
After removing duplicates across databases, the initial search yielded 310 studies identified by the initial search. The author then reviewed the reference lists of identified articles for additional relevant studies (see Booth et al., 2016). In the reference list review, additional relevant studies were identified, including both peer-reviewed academic research and grey literature, that is, research findings that are published outside of academic outlets (Auger, 1998). Grey literature such as practitioner, government, and non-academic research can add tremendous value to a systematic literature review, particularly within the realm of criminology and criminal justice as substantial research is conducted by these bodies (Tompson & Belur, 2016). Since much of the inquiry into the issue of untested SAKs has been driven by grant requirements for the Justice Department's National Sexual Assault Kit Initiative (SAKI; 2021), many grant recipients have undertaken valuable research into this topic that has not been published in academic outlets, as have independent, non-governmental watchdogs such as Human Rights Watch. Since these studies were largely exploratory in nature, the grey literature varied in analytical complexity from unsophisticated data analysis to rigorous analytical frameworks. As such, it was not always feasible to ascertain the statistical significance of findings within the grey literature. Despite these analytical shortcomings, the author included these studies as the data remains pertinent in assessing this nascent research topic and mitigating publication bias.

Next, based on the author's existing knowledge of the literature, the abstracts of an additional seven records were added and included in the final sample. Given the small number of academic studies on this topic and the distinct limitation of the above four databases to capture grey, unpublished, and other extant literature, the author's existing subject-matter expertise was key to gathering a complete and comprehensive sample and to mitigating bias by identifying *all* available evidence. Boothe and colleagues (2016) affirm the value and methodological integrity of the purposive incorporation of additional records identified by a subject-matter expert that are not uncovered by the database searches in a systematic review. This yielded a total of 317 articles. Of these studies, relevant academic articles were identified by reading through abstracts to assess if they should be included in the review. Grey literature was likewise assessed for relevance through a brief review of the introduction and methodology sections when no abstract was available. To be included, the abstract or introduction and methodology sections must have described a study that met the following inclusion criteria: an original empirical article in a peer-reviewed journal or a grey literature study, published between the years of 2004 through 2021, that utilized quantitative, qualitative, or mixed methods to examine why sexual assault kits were not submitted for testing within the criminal justice system. The author identified 39 records for potential inclusion.

Though all initial 317 articles tackled some aspect of the untested SAK issue, the predominant reason for exclusion was the failure to specifically examine *why* sexual assault kits were not submitted for testing. The full-text articles for the 39 records were reviewed in their entirety to ensure that each met the above-inclusion criteria. Following this assessment, a total of 12 articles were identified for final inclusion. Again, articles were primarily excluded for failure to satisfy the targeted research question of the criteria. A check of the references for each of these 12 articles produced an additional 36 references for potential inclusion. Following the process of reviewing the abstracts for each of these, the author identified 31 additional studies for inclusion. Upon full-text review of these 31 studies, seven were excluded from this review for not meeting the criteria, yielding nine reference list studies identified for final inclusion. After coding was underway, an additional five studies were excluded after identifying that they assessed only the descriptive characteristics of untested SAKs, rather than directly exploring why SAKs were not submitted for testing.

Though mindful of multiple publication bias, two studies were included in this systematic review that utilized the same samples from the same data sets, given that each pursued a different pertinent research question. The final sample (n = 16) was then reviewed and systematically coded for sample selection, sample size, data source, sample locale, methodology, analysis, theory used to inform investigation of untested kits, reasons explored for why kits were not submitted for testing, and the findings of why kits were not submitted for testing. Figure 1 presents a flowchart of the search results, and the review and selection process.

Figure 1: Flowchart of Search Results, and the Review and Selection Process



Results

In this section, the units of analysis (i.e., peer-reviewed research articles and grey literature) will be systematically categorized by research design features. Thematic frequencies will be identified to elucidate patterns within the above-noted categories among the studies. Table 1 describes the sampling selections and techniques, data sources, locales, methodologies, analyses, theories used to inform investigation of untested kits, reasons explored for why kits were not submitted for testing, and findings yielded about why large numbers of SAKs were not submitted for testing. Included studies were published between 2004 and 2021, relying upon data and archival records collected as early as 1980 and as recently as 2017. All studies were conducted in the United States. Across different studies, varying descriptions are used to account for the reasons why SAKs were not tested. While drawing connections between common themes and findings of interest, the author intentionally retains the original lexicon utilized by each research article in order to preserve the integrity of such findings in discussing each study.

Use of Theory to Explore Unsubmitted SAKs

In one fourth of the studies (n = 4), the authors explicitly identified a theory or conceptual model that informed their empirical investigation of the issue of untested SAKs. An additional study presented theoretical concepts that informed the overall investigation of untested kits but did not explicitly identify a theory. Another study identified the general theory of forensic evidence for the purpose of providing foundational knowledge but not to inform the issue of untested SAKs. The remaining 12 articles (75%) provided no mention of a theory or identifiable theoretical concepts. Of the four studies that explicitly identified a theory that informed their empirical investigation, a total of three different theories were utilized: ecological systems theory, focal concerns theory, and structural contingency theory.

Ecological Systems Theory

Two studies used Bronfenbrenner's (1979, 1986) ecological systems theory to inform their empirical investigations in examining police decisions not to test SAKs. Rooted in developmental psychology, this theory stipulates that "human behavior and social phenomenon are shaped by mutually influencing relationships among individuals and the settings in which they live and work" (R. Campbell, Fehler-Cabral, et al., 2017, p. 456). This influence on behavior extends to components of a system that produce interdependent changes upon one another (R. Campbell, Fehler-Cabral, et al., 2017). As such, policies, resources, and norms of an organization, system, or community stimulate behavior change. Ecological systems theory has been widely applied to gender-based violence research (R. Campbell, Fehler-Cabral, et al., 2015). Situating the problem of untested SAKs within this framework presents this issue in a multidisciplinary context that involves police, crime labs, SANEs, and prosecutors. R. Campbell, Fehler-Cabral, and colleagues (2017) revealed through ecological systems theory that, collectively, these organizations contributed to the accumulation of untested SAKs partly through chronic resource scarcity, delayed access to CODIS DNA database technology, and lack of SANEs.

Focal Concerns Theory

One study applied focal concerns theory to their empirical investigation to understand discretionary SAK testing practices by police. Focal concerns theory presents a valuable model for examining criminal justice decision-making in sexual assault cases (Spohn, 2016; Spohn et al., 2001, 2014; Spohn & Hemmens, 2012). This theory posits that criminal justice actors and decision-makers (e.g., police, prosecutors, and judges) identify a certain set of salient aspects of a crime or case, based on their specific roles and responsibilities within the system, which guides their decision-making (Steffensmeier et al., 1998). The use of focal concerns theory to understand the issue of untested SAKs is unique as it has been previously applied to sexual assault cases in the criminal justice system to determine what differentiates these from one another in their case progression through the system; however, this framework is novel in its application to cases that were *not* pursued by the criminal justice system (R. Campbell & Fehler-Cabral, 2018). R. Campbell and Fehler-Cabral (2018) reported that while practical concerns regarding limited resources for SAK testing were a major concern, as there were not enough resources to test all SAKs, focal concerns by police about victim credibility and cooperation were more influential in explaining why SAKs were not tested.

Structural Contingency Theory

One study used structural contingency theory to guide its inquiry into the issue of untested SAKs. According to structural contingency theory, organizations are regarded as responsive to their technical environment (Donaldson, 1995). This conceptual framework contends that no optimal organizational structure exists, so organizations adapt their strategies and technologies to sustain success and remain effective. Thus, organizations pivot to adjust to challenges that arise in environment and circumstance

Table 1: Description of Studies Included in Systematic Review

Author (year)	Sample and Data Source	Sample Locale	Method	Analysis	Theory Examining Unsubmitted SAKs[1]	Considered Factors Inhibiting SAK Submission	Findings: Factors Inhibiting SAK Submission
Alaska Department of Public Safety (2017)[2]	A census of 49 Alaska police agencies in 2017. Response rate = 93.9%.[3]	Alaska	Establishment survey questionnaire	Descriptive statistical analysis	None	Unknown	District Attorney's Office declined the case; awaiting a decision from the District Attorney's Office on whether the kit results were needed for evidence; case still under investigation; issue was consent, not assailant identity; evidence collected beyond the testing timeframe
R. Campbell, Fehler-Cabral, et al. (2015)	A stratified random sample of 1,268 police reports for SA investigations with untested kits from 1980 to November 2009; a purposive and snowball sample of 42 participants in bi-monthly unsubmitted SAK stakeholder meetings from April 1, 2011 to September 30, 2013; 81 observations (~186 hours) of unsubmitted SAK stakeholder meetings from April 1, 2011 to September 30, 2013; 93 archival record documents from Detroit police, prosecutors, hospitals, crime labs, and advocacy organizations from 1980 to 2009; 1,595 SAK test results from all previously untested SAKs from 1980 to 2009	Detroit, Michigan	Ethnography, qualitative interviews, focus groups, content analysis	Qualitative data analytic framework, multi-level longitudinal quantitative logistic regression modeling	Ecological Systems Theory	None – Exploratory	Chronic police resource scarcity; police regularly expressed negative, stereotyping beliefs about sexual assault victims; known crime lab testing capacity limits, lack of cohesion among agencies
R. Campbell, Fehler-Cabral, et al. (2017)	A census of 10,817 SAKs from 1980 to 2009; a purposive and snowball sample of 42 participants in bi-monthly unsubmitted SAK stakeholder meetings from April 1, 2011 to September 30, 2013; 81 observations (~186 hours) of unsubmitted SAK stakeholder meetings from April 1, 2011 to September 30, 2013; 93 archival record documents from Detroit police, prosecutors, hospitals, crime labs, and advocacy organizations from 1980 to 2009	Detroit, Michigan	Ethnography, qualitative interviews, focus groups, content analysis	Qualitative data analytic framework, multilevel modeling	Ecological Systems Theory	Historical context: DNA/CODIS era in which SAK was collected; police department context: staffing cuts, policy changes for SAK submissions; crime lab context: funding for DNA testing; medical system context: establishment of SANE program	Chronic police resource scarcity; lack of availability of DNA testing, delayed access to CODIS, and shortage of SANE[4] programs
R. Campbell and Fehler-Cabral (2018)	A stratified random sample of 1,268 police reports for SA[5] investigations with untested kits from 1980 to November 2009; a purposive and snowball sample of 42 participants in bi-monthly unsubmitted SAK stakeholder meetings from April 1, 2011 to September 30, 2013; 81 observations (~186 hours) of unsubmitted SAK stakeholder meetings from April 1, 2011 to September 30, 2013; 93 archival record documents from Detroit police, prosecutors, hospitals, crime labs, and advocacy organizations from 1980 to 2009; 1,595 SAK test results from all previously untested SAKs from 1980 to 2009	Detroit, Michigan	Sequential exploratory mixed methods design: Ethnography, qualitative interviews, focus groups, content analysis, secondary data	Qualitative data analytic framework	Focal Concerns Theory; mention of core tenets of Feminist Carceral Theory and Anti-Carceral Theory but authors do not reconcile; mention of racism, classism, and feminism	None – Exploratory	Police resource constraints; police labeled victims as "not cooperative" or "refused to prosecute;" inter-sectional sexism, racism, and classism; police held negative beliefs about of rape victims; police often assumed victims were engaged in sex work; police questioned credibility of victims; police doubted victims' credibility if they knew or were minimally acquainted with the assailant

Edelen (2015)	A census of Kentucky's 391 law enforcement agencies and 112 hospitals in 2015. Response rate = 100%.	Kentucky	Establishment survey questionnaire, qualitative interviews, ethnography	Descriptive statistical analysis	None	Victim declined to file a complaint; victim informed police the crime did not occur; DNA evidence was not needed to convict; investigator had no suspects; investigator suspected the act was consensual; victim filed complaint against spouse or former spouse; prosecutor advised it was not necessary; delivering to the KSP lab is cost prohibitive or creates logistical issues	Limited crime lab resources; staffing, recruitment, retention, and noncompetitive salary issues at crime labs; communications and policies from the crime labs regarding sexual assault kits were inconsistent and confusing; there are not enough SANEs practicing in Kentucky; most police agencies lack clear written instructions for handling SAKs; crime lab testing delays; victim declined to file a complaint; victim informed police the crime did not occur; DNA evidence was not needed to convict; investigator had no suspects
Hendrix et al. (2020)	A census of the 222 laboratories in the Bureau of Justice Statistics' 2009 Census of Publicly Funded Forensic Crime Laboratories. Response rate = 67%. A random sample of 321 law enforcement agencies that submit SAK evidence to these crime labs. Response rate not reported.	National	Establishment survey questionnaire, qualitative interviews, focus groups	Stochastic frontier modeling	None	Police staffing and resources, SAK submission policies, police agency characteristics, method of obtaining SAKs; exploratory re SAK submission barriers	Police staffing and resource limitations (primary); crime lab technical inefficiencies (secondary)
Human Rights Watch (2009)	A purposive sample of 138 SAK stakeholders, archival records from 30 Los Angeles County cities (number of records not specified)	Los Angeles City and Los Angeles County, California	Ethnography, qualitative interviews, focus groups, content analysis	Non-statistical summary of patterns, themes, narratives, and outcomes of interest	None	None – Exploratory	Crime lab testing delays, backlogs, lack of capacity, and staff; resistance to private lab outsourcing; police concerns of victim credibility; SAK testing generally limited to issues of identity rather than consent
Human Rights Watch (2010)	A purposive sample of 148 law enforcement agencies (104 city police departments and 44 county-level agencies) in 2009, archival records from these agencies from 1995 to 2009 (number of records not specified), a purposive sample of 304 SAK stakeholders	Illinois	Ethnography, qualitative interviews, content analysis	Descriptive statistical analysis	None	None – Exploratory	Testing not necessary in acquaintance rapes, only necessary in "winnable" cases, victim credibility concerns, known crime lab backlogs, testing delays, lack of crime lab capacity to test, state ineffectiveness in addressing the crime lab needs, crime lab mismanagement of funding, prosecutorial review and case rejection, shortage of SANEs
Human Rights Watch (2013)	A purposive sample of "dozens" of SAK stakeholders, 250+ District of Columbia Metropolitan Police Department (MPD) SA case files from January 1, 2008 to 2011, 1000+ MPD SA incident reports from January 1, 2008 to 2011, 10 training manuals and policies for law enforcement handling SA cases in 2008, deposition transcripts and discovery material from a 2008 civil lawsuit against MPD	District of Columbia	Qualitative interviews, content analysis	Non-statistical summary of patterns, themes, narratives, and outcomes of interest	None explicitly identified; Feminist Legal Theory concepts presented	Police policies, practices, and training	Police discretionary practices that are inconsistent with police policy (victim credibility concerns, discouraging reporting, declining to document SA cases, prematurely closing cases, routine victim-blaming practices), consent issue; inadequate police training

Florida Department of Law Enforcement (2020)	A census of Florida's 212 police departments (Response rate = 69%) and 67 sheriffs' offices (Response rate = 100%) from August 2015 to December 2015	Florida	Establishment survey questionnaire	Descriptive statistical analysis	None	Victim decided not to participate in or proceed with investigation, State Attorney's Office declined to prosecute, suspect pled guilty, SAK collected from nonreporting victim	Victim decided not to participate in or proceed with investigation, State Attorney's Office declined to prosecute
Indiana State Police (2017)	A census of 92 Indiana counties in 2017. Response rate = 99%.	Indiana	Establishment survey questionnaire	Descriptive statistical analysis	None	Non-reporting victim/"Jane Doe" kits, no crime/false report kits, case adjudicated	Non-reporting victim/"Jane Doe" kits, no crime/false report kits, case adjudicated
Iowa Attorney General (2020)	A census of Iowa's 387 active police departments and sheriffs' offices in 2016. Response rate = 100%.	Iowa	Establishment survey questionnaire	Descriptive statistical analysis	None	Suspect not identified, doubt truthfulness of accusation, victim did not make a police report, case has been dismissed, anonymous kit collected at hospital, uncertain of usefulness of forensic evidence, analysis not requested by prosecution, suspect identified but not formally charged, insufficient funding for analysis of evidence, perceived lab guidelines, victim does not wish to file charges, questions regarding consent	Suspect not identified, doubt truthfulness of accusation, victim did not make a police report, case has been dismissed, anonymous kit collected at hospital, uncertain of usefulness of forensic evidence, analysis not requested by prosecution, suspect identified but not formally charged, insufficient funding for analysis of evidence, victim does not wish to file charges, questions regarding consent
Lovrich et al. (2004)	A stratified random sample of 1,692 U.S. law enforcement agencies (Response rate = 50.1%), 50 state laboratories (Response rate = 100%), 70 local laboratories (Response rate = 100%) from 2002 to 2003	National	Establishment survey questionnaire	Descriptive statistical analysis and estimation	None	Police: A suspect has not yet been identified; a suspect has been identified but not yet charged; guilty plea is expected; uncertain how DNA analysis would be useful in case; lack of funding for DNA analysis; inability of labs to produce timely results; lab is not processing requests for DNA testing; uncertain where to send the case for DNA analysis; analysis not requested by prosecutors Crime labs: A suspect has not yet been identified; suspect identified but not yet charged; guilty plea is anticipated; agency uncertain how DNA analysis may help case; backlog at lab prevents timely results; lab is not processing requests for DNA testing; agencies uncertain as to where to send case for analysis; analysis not requested by prosecution	Police: A suspect has not yet been identified Crime Labs: Backlog at lab prevents timely results; a suspect has not yet been identified; analysis not requested by prosecution; guilty plea is anticipated; lack of funding for DNA testing

Strom and Hickman (2010)	A stratified random sample of 3,153 state and local U.S. law enforcement agencies with an investigative function listed in the Bureau of Justice Statistics' 2004 Census of State and Local Law Enforcement Agencies. Response rate = 73%.	National	Establishment survey questionnaire	Descriptive statistical analysis, logistic regression	None	Suspect has not been identified; suspect adjudicated without forensic evidence testing; case has been dismissed; uncertain of usefulness of forensic evidence; analysis not requested by prosecutors; suspect has been identified but not formally charged; inability of lab to produce timely results; insufficient funding for analysis of evidence; lab will not accept forensic evidence due to backlog; uncertain where to send forensic evidence for analysis	Suspect has not been identified; suspect adjudicated without forensic evidence testing
Strom et al. (2020)	A census of 222 publicly-funded state and local crime laboratories that conduct biological forensic analysis in 2014. Response rate = 67%.	National	Establishment survey questionnaire	Stochastic frontier modeling	Structural Contingency Theory	Productivity of crime lab analysts, equipment units, and technologies for SAK testing, crime lab technical inefficiencies, lack of crime lab resources	Crime lab technical inefficiencies; insufficient crime lab resources (e.g., too few forensic analysts)
Wisconsin Sexual Assault Kit Initiative (2021)	A census of Wisconsin's 557 law enforcement agencies in all 72 counties from November 2016 to March 2017. Response rate = 100%.	Wisconsin	Establishment survey questionnaire	Descriptive statistical analysis	None	Already have convictions related to the incident; forensic exam conducted as part of autopsy-no sexual assault suspected; non-assaultive juveniles; not chargeable as a sexual assault due to the suspect's age; report unavailable; suspect acquitted or not guilty; suspect SAK; unfounded; victim did not consent to testing	Victim did not consent to SAK testing; already have convictions related to the incident

[1] Sexual assault kits, or rape kits.

[2] Alaska has issued follow up reports in 2018, 2019, and 2020, however this report indicated initial reasons for untested kits.

[3] Response rates reported for all census samples.

[4] Sexual assault nurse examiner.

[5] Sexual assault.

by constantly striving for efficiency. Strom and colleagues (2020) drew upon this theory to examine the crime lab inefficiencies that drove accumulations of untested SAKs. Within this framework, Strom and colleagues (2020) reported that technical inefficiencies and insufficient resources in crime labs contributed to the amassment of large numbers of untested SAKs.

Sample Selection and Composition

Sample Sizes

Sample sizes ranged from n = 42 to n = 10,817. Many of the samples were drawn from individual states or cities. The largest single state and city samples came from Wisconsin at n = 557 and Detroit at n = 10,817, respectively. The second and third largest samples were drawn from national data, including the Bureau of Justice Statistics' 2004 Census of State and Local Law Enforcement Agencies.

Sampling Strategies

Over half of the studies (n = 9) gathered data by census. In six of these studies, censuses were undertaken by state governments that surveyed agencies responsible for submitting and processing SAKs, including law enforcement agencies, crime labs, and/or hospitals. Two other censuses surveyed crime labs, one of which also included an additional random sample of law enforcement agencies. One included a census of tested and untested SAKs that was compared with historical and budget data over time. Obtaining answers from an entire population of interest is invaluable as it provides a true measure rather than drawing a sample (Bachman & Schutt, 2011). However, censuses are not commonly used as it can be costly and time-consuming to survey an entire population with the added difficulty of obtaining a complete response rate. The research topic of untested SAKs was uniquely conducive to a census approach as SAKI grantees were required to complete an inventory of all untested SAKs within their respective jurisdictions, to which many appended additional survey questions to examine why jurisdictions had not submitted SAKs for testing. With a census approach, however, nonresponse rates can problematically be a source of survey error, reduce generalizability of the results, and affect the credibility of the research (Fowler, 2009). Nearly all of these studies had either a complete response (n = 3) or high response rate (67%-99%, n = 5), thus nonsampling error was not of concern here.

Three studies (18.8%) used a purposive sample as their primary sampling method, which is useful when the researcher is seeking detailed knowledge about a specific phenomenon such as the accumulation of untested SAKs. In the studies that used purposive sampling, the selection consisted of specific individuals who are involved with some aspect of processing SAKs, such as sexual assault investigators, SANEs, and prosecutors.

Five studies (31.3%) used stratified random sampling. In two of these studies, stratified random sampling was used alongside other sampling methods, including purposive sampling and snowball sampling. Despite having utilized the same samples from the same data sets out of Detroit, Michigan, these two studies were included in the systematic review given that each pursued a different research question. Within these studies, stratified random sampling was used to draw a representative sample of police reports of sexual assault from 1980 to November 2009. Purposive sampling was used to target known SAK stakeholders, such as police, sexual assault investigators, prosecutors, SANEs, survivors, and victim advocates for qualitative interviews and focus groups. Snowball sampling was used to recruit additional SAK stakeholders via the known SAK stakeholder participants for participation in qualitative interviews and focus groups.

Sample Locales

Using the U.S. Census Bureau's (2013) four census regions (e.g., Northeast, Midwest, South, and West), seven of the studies (43.75%) utilized samples from the Midwest: three studies drew samples from Detroit, and four drew from various states within the region. Three studies (18.75%) drew samples from the South. Two studies (12.5%) drew samples from the West, comprised of the state of Alaska and Los Angeles City and County. Four studies (25%) drew from a nationally representative sample.

Data Sources

Half of the studies (n = 8) used a range of data sources, including but not limited to law enforcement agencies, crime labs, SANE programs, hospitals, medical facilities, prosecutors, sexual assault survivors, victim advocacy organizations, policymakers, and government officials. Fourteen studies (88%) used data from law enforcement agencies, including state, county, and municipal police and sheriffs' offices, with five using data exclusively from law enforcement agencies. Of these, three studies reported including tribal police agencies; all others did not specify. One study within those that gathered data from law enforcement also gathered additional data from hospitals. Six studies (38%) included data from crime labs, with only one study using crime lab data exclusively.

Methodologies

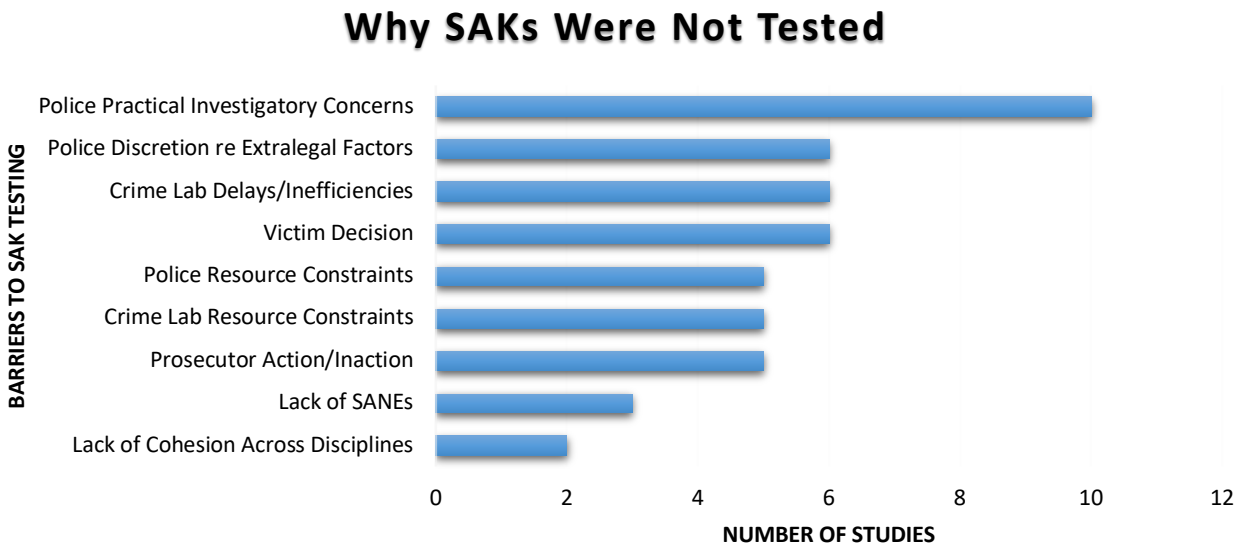
Ten studies (62.5%) utilized establishment surveys, with eight (50%) using this as their only methodology. An establishment survey is a survey of a sample of agencies or enterprises that seeks to measure the behavior, structure, or output of organizations rather than individuals (DesRoches, 2008). Establishment surveys provided a suitable methodological approach for this research topic as untested SAKs are directly linked to the various organizations responsible for collecting, submitting, and performing forensic analysis on SAKs.

Half of the studies (n = 8) used mixed methods research designs, which included various combinations of ethnography, qualitative interviews, content analysis, surveys, focus groups, and secondary data. Half of the studies (n = 8) used a qualitative approach within a mixed methods framework. Of these, cross-sectional and longitudinal qualitative interviews, focus groups, content analysis, and ethnographies were the qualitative methods employed. These furnished valuable data with which to supplement and enrich quantitative data. A blend of quantitative and qualitative methodologies can enhance research by adding depth, detail, and nuance to numerical data (Patton, 1997). For criminal justice research in particular, mixed methods research can be crucial to elucidating broad and complex criminal justice issues to identify what is "inside the black box" (Bachman & Schutt, 2011, p. 367). Recent research indicates that most criminology and criminal justice mixed methods research is being conducted within the specialty area of victimology (Wilkes et al., 2021). By the same token, a central pillar of SAK research is victimology, as it is focused on the distinct set of criminal justice processes that affect victims of sexual violence. In the studies examined here, the mixed methods approach was useful for exploratory purposes in triangulating common themes across quantitative and qualitative data and was fitting for the interdependent, multidisciplinary nature of the untested SAK issue in identifying contributing factors across organizations, such as police, crime labs, prosecutors, victim advocacy organizations, and hospitals.

Outcomes of Interest and Findings: Why SAKs Were Not Tested

Studies reported a range of findings related to forensic evidence in sexual assault investigations, spanning from the initial reporting of the crime to police, to specific investigative steps completed by law enforcement, to forensic evidence processing. Findings that identified which factors inhibited SAK submission varied among studies and were, at times, guided by which initial factors were identified for consideration. Yet, there were compelling conclusions that emerged across studies (see Figure 2).

Figure 2: Why SAKs Were Not Tested: Factors Identified in the Systematic Literature Review



Practical Police Concerns

Over half of the studies (n = 10) revealed that practical issues about the case guided police decisions to not submit SAKs for testing. Matters of practical concern reported by police during the investigation phase of cases included the uncertainty of the usefulness of DNA, DNA is not useful, evidence was collected beyond the testing timeframe, lack of ability to test DNA, delayed access to CODIS, insufficient evidence storage, the potential benefits of DNA evidence are misunderstood, forensic testing would not benefit the case, no crime occurred, the SAK was an anonymous or "Jane Doe" kit, a crime did not occur, or the SAK was missing a police report. Additional explanations cited in the research related to the adjudication phase of the case include that the SAK was not expected to be useful for a prosecution, DNA evidence was not needed to convict the suspect, the case was not "winnable," the suspect admitted to the crime, the suspect pled guilty, charges were already filed, the case was already adjudicated, and a conviction had already been obtained related to the incident. In five studies (31.3%), police reported not submitting SAKs for testing because sexual contact was determined to be an issue of victim consent, rather than suspect identity.

Police Discretion

Six studies (37.5%) cited some form of discretionary police decision-making based on extralegal factors. A primary concern of police in decisions to not test SAKs was the credibility of the victim, which included doubting the truthfulness of the accusation and determining that the victim falsely reported the crime. Of these, three studies (18.8%) found that police adhered to pervasive rape stereotypes, held negative beliefs about of rape victims, and engaged in routine victim-blaming practices. Human Rights Watch (2013) reported that, in the District of Columbia, police not only routinely questioned victim credibility, they also declined to document sexual assault reports, discouraged victims from reporting sexual assault, and prematurely closed sexual assault investigations. R. Campbell and Fehler-Cabral (2018) cited that extralegal characteristics, such as race, poverty, gender, and assumptions about victim behavior (e.g., victims assumed to be engaging in sex work), played a central role in police decisions to not test SAKs.

Crime Lab Delays

Six studies (37.5%) cited crime lab delays, technical inefficiencies, and backlogs as key factors that inhibited the testing of SAKs. These factors affected both the submission of SAKs for testing and the actual testing of SAKs, such that known crime lab delays were pivotal to police decisions to not submit SAKs for testing, as they believed that they would not receive the DNA results in time to be useful to their investigation and that SAKs that were submitted by police to crime labs that were experiencing delays languished in the testing queue. For instance, it routinely takes 12 to 14 months for the forensic lab to analyze sexual assault evidence in Kentucky (Edelen, 2015). Aside from delays, at times, labs intervened with the trajectory of SAKs they received for testing by outright refusing to test them. One sheriff's deputy stated that the forensic lab told him they would not test the kit if the case was not going to be prosecuted (Edelen, 2015).

Police Resource Constraints

Five studies (31.3%) named police budget constraints, resource scarcity, or lack of funding for testing as key barriers to SAK testing. More specifically, understaffing in sexual assault units, voluminous caseloads, and cost-prohibitive delivery of kits to crime labs were reported. Known resource constraints may also motivate police to be selective about which SAKs are submitted for testing if they believe there is not sufficient funding to test all kits.

Crime Lab Resource Constraints

Five studies (31.3%) reported crime lab resource constraints as a factor contributing to unsubmitted SAKs. Edelen (2015) specified that state budget cuts, staffing, recruitment, retention, and noncompetitive salary issues at state crime labs were problematic in Kentucky. In Los Angeles, efforts to address crime lab deficiencies that contributed to untested SAKs were met with resistance to private lab outsourcing by LAPD officials (Human Rights Watch, 2009).

Prosecutors

Five studies (31.3%) indicated that SAKs were not submitted for forensic analysis due to some action, communication, or inaction by the prosecutor's office. Included within these findings were that the prosecutor advised SAK testing was not necessary, the case was declined for prosecution, or forensic analysis was not requested by the prosecution. When police in Illinois submitted SAKs to crime labs for testing, some were returned untested at the direct request of the prosecutor's office to the crime lab due to the prosecutor's decision to close the case (Human Rights Watch, 2010).

Victims

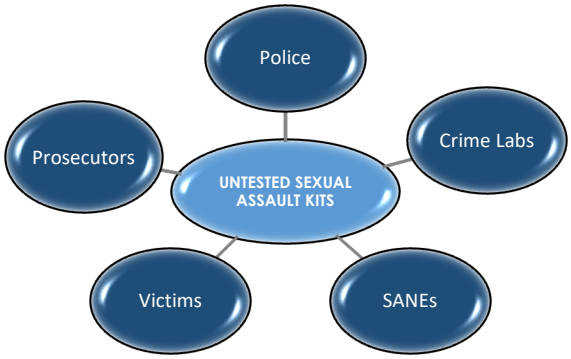
Six studies (26.3%) reported that SAKs were not submitted for forensic analysis because of action

or inaction by the victim as indicated by police. The reasons given included that the victim did not wish to file charges, did not consent to SAK testing, did not file a police report, decided not to participate in or proceed with the investigation, was uncooperative, or informed police that a crime did not occur. Of note, this data came from criminal justice personnel and records rather than from the victims themselves.

SANEs

Of the sources that ultimately played a key role in the problem of untested SAKs (see Figure 3), three studies (18.8%) cited either a shortage of SANEs or a lack of SANE programs as contributing factors that inhibited SAK testing. This may indicate that nurses who specialize in this care and these type of examinations may help facilitate the progression of the kit through the system and may support victim engagement in the criminal justice process.

Figure 3: Sources that Contributed to Untested Sexual Assault Kits



Lack of Cohesion Across Disciplines

Two studies (12.5%) reported that a lack of cohesion across disciplines was a central factor in not submitting SAKs for testing. Edelen (2015) reported that crime labs had inconsistent and confusing communication and policies regarding SAKs that were unclear to police personnel, prone to misinterpretation, and, ultimately, added obstacles to submitting SAKs for testing in Kentucky (Edelen, 2015). Likewise, in Detroit, conflicting messaging among agencies was a factor that contributed to unsubmitted SAKs (R. Campbell, Fehler-Cabral, et al., 2015). Specifically, medical facilities indicated to police that sexual assault cases were not a priority and that SAKs would not be helpful to their investigation, whereas prosecutors emphasized to police the importance and urgency of testing SAKs, yet the crime labs stressed to police that they did not have the capacity to test all kits (R. Campbell, Fehler-Cabral, et al., 2015).

Discussion

The present systematic review examined prior research on the systemic issue of why SAKs were not submitted for testing in an effort to highlight and explore explanations that appeared to be bifurcated into decision-making by police in sexual assault investigations based on matters of *practical concern* and police use of discretion concerning *extralegal factors*. Through this systematic review, several important contributions emerged.

First, it is apparent that the explanations for unsubmitted SAKs are not dichotomized but rather come together to tell a complex story of why SAKs remained unsubmitted for forensic testing for decades throughout the criminal justice system as a consequence of shared responsibility across several disciplines. Though it may appear prima facie that police bear sole responsibility for submitting SAKs for forensic testing, this review suggests that police also routinely act based on pressures from other criminal justice actors and agencies, namely, prosecutors, crime labs, and sexual assault survivors themselves, and that these actors, at times, shoulder direct responsibility for decisions not to test SAKs.

Prosecutors hold a powerful gatekeeping role in the criminal justice system and typically incur little oversight (Spohn & Hemmens, 2012). Research has shown that in sexual assault decision-making, prosecutors may be more concerned with convictability rather than justice (Henry & Jurek, 2020; Spohn & Hemmens, 2012) and may conform to sexual assault stereotypes when making decisions regarding sexual assault cases (Beichner & Spohn, 2012; R. Campbell et al., 2009). There has long been research supporting routine prosecutorial sexual assault case rejection at the charging level (Spohn et al., 2001; Spohn & Hemmens, 2012); however, the exertion of prosecutorial discretionary power in decisions not to test SAKs, emphasized by the present study, may be an overlooked role. The studies examined here reveal that prosecutors intervene in SAK submission and testing processes by superseding police decisions to test SAKs and even by reaching out to crime labs directly to avert testing of SAKs in the testing queue.

Next, the results affirm findings that crime labs are inadequately funded and struggle to keep pace with the growing demand for testing crime scene evidence (National Research Council, 2009). In fact, the results reveal that messaging about resource constraints by crime lab personnel to police may augment police perceptions that DNA evidence is not a tool that can be utilized in all investigations as police disclosed that they selectively submitted forensic

evidence for testing when they knew that their crime labs had backlogs or insufficient resources.

Although victims evidently lack the authority to compel police to test their SAKs, this study reveals they do exert some influence over the decision to *not* have their kit tested. Police do not send SAKs for testing if the victim requests that their kit not be tested, informs police that a crime did not occur, declines to file a police report, is unreachable, or is perceived by the police as uncooperative (R. Campbell & Fehler-Cabral, 2018). However, police labeling of victims as uncooperative may be problematic as victims may disengage with the criminal justice system based on harsh or negative treatment by law enforcement during the investigation process (Murphy et al., 2014; Shaw et al., 2017; Spohn & Tellis, 2010; Tasca et al., 2013). It is also notable that victim communication (or lack thereof) and victim behavior that guides SAK submission decisions are primarily reported by police, not by victims themselves. However, the studies included in this review reveal that victims exert some type of influence over the decision to *not* have their kit tested, however complex and nuanced this issue may be. Nevertheless, considered individually, these explanations only breach the surface of the issue.

Taken as a whole, the patterns that ultimately emerge from the synthesis of such siloed explanations are problematic lack of communication and cooperation among organizations, chronic resource constraints across criminal justice agencies, and deeply entrenched stereotypes and myths about sexual assault and sexual assault victims. To make meaningful strides toward tackling each issue, several key considerations are offered.

To foster cohesion among SAK-involved actors and agencies, jurisdictions must create and cultivate multidisciplinary workgroups. Washington State led the way with the passage of RCW 43.10.800 (2019), which mandated a best practices advisory group to forge relationships across agencies and to inform SAK processes and procedures across the state. This group included legislators, police, prosecutors, defense attorneys, crime lab personnel, victim advocacy groups, hospital personnel, SANEs, and two sexual assault survivors. Other jurisdictions should explore and implement comparable viable solutions. Next, as resource scarcity continues to be problematic for all publicly-funded organizations involved in processing SAKs, including police agencies, crime labs, hospitals, and victim advocacy groups, the passage of legislation providing adequate funding for such organizations must be prioritized. Additionally, private labs should be leveraged to accelerate the processing of incoming SAKs, as well as any previously untested kits, to avoid degradation of evidence, statutory tolling of uncharged cases, and delays in justice. Last, and likely most challenging to surmount, training that unravels adherence to rape stereotypes by focusing on victim-centered, trauma-informed approaches to sexual assault victims is vital. Research indicates that this type of training is effective at reducing rape myth adherence and increasing knowledge of trauma-informed practices among sexual assault investigators and that these effects remain stable over time (B. A. Campbell et al., 2020). These types of trainings will better equip police to navigate sexual assault case decision-making in informed and strategic ways, rather than relying on longstanding harmful sexual assault stereotypes.

Finally, the present study reveals that researchers shape these findings through the methodological choices they make. A wide variety of factors influence the range of findings reported among studies on unsubmitted SAKs, including all components of the research design. For instance, those targeting crime labs will find explanations for untested SAKs therein. Likewise, those seeking police samples will find answers there. In a strategic approach, this study brought together research that spanned varied disciplines and jurisdictions to develop a broad and more nuanced picture of the decision-making and context driving the systemic amassment of untested SAKs over time that emphasizes the multidisciplinary nature of processing SAKs. Through this review, several key practical considerations emerge from the findings and limitations of the present study.

Limitations and Future Research

The foremost limitation of this study is the lack of extant research on the issue of unsubmitted SAKs. Despite a growing body of literature, the dearth of pertinent research on this topic necessarily constrains the generalizability of the present findings. As such, the findings of a systematic literature review are only as reliable as the underlying sampling techniques, measures, and methods utilized in each of the primary studies. Among the studies captured within this research, there are striking differences in sampling strategies (i.e., small samples vs. larger samples, purposive vs. random sampling), sample characteristics (i.e., nationally-representative vs. municipal samples, crime labs vs. police agencies), methods (i.e., ethnography vs. survey), and the range of factors each study considered may account for variability in findings across studies on unsubmitted SAKs. Given the rapidly changing landscape of the untested SAK dilemma, even the variance in time across data collection may create disparities as many jurisdictions make strides in testing large numbers of SAKs. Therefore, deliberate and strategic efforts must be made to more meaningfully examine the phenomenon of untested kits.

Second, the studies here further reveal that research on untested SAKs presents a myriad of methodological challenges. Some law enforcement have expressed apprehension about participating in research related to SAKs, which has manifested in the refusal or delay in responding to public records requests and in refuting empirical research results (Human Rights Watch, 2009, 2013). Next, obtaining a representative sample is a challenge in SAK research due to the heterogeneity among the jurisdictions that have been studied thus far. Samples in many of the studies used in this review were taken from individual cities and counties that may have populations with features distinct to that locale. For instance, R. Campbell, Fehler-Cabral, and colleagues (2017) caution about the generalizability of their research as "Detroit is a racially homogeneous city (82% Black in the 2000 Census, 83% in the 2010 Census), with a high violent crime rate … and severe economic hardships" (p. 465). Nevertheless, as the body of research on SAKs grows, so too should the diversification of locales studied to bolster the generalizability of such findings.

Third, the three theories identified in the research (e.g., focal concerns, ecological systems, and structural contingency) all provide useful frameworks within which to situate this issue as they illuminate crucial decision-making processes throughout the agencies and actors responsible for submitting and testing SAKs. It is noteworthy, however, that only a fourth of the studies (n = 4) utilized a theory at all. It is conceivable that conflict theory, Black's (1976) theory of the behavior of law (see Ylang & Holtfreter, 2020, for application to sexual assault case processing), critical legal theory, critical race theory, and feminist theory (see Naffine, 1996) perspectives could be used in future studies as models with which to gain insight into this problem. Even broken windows theory (Wilson & Kelling, 1982) has seen contemporary application to the police neglect of sexual assault crimes (see Sheley, 2018) and may provide a valuable conceptual framework for how SAKs are systemically neglected throughout the criminal justice system. Since research on this nascent topic is predominantly exploratory in nature, it would have been valuable for other studies in this review to ground their data in theory in order to more deeply understand the decision-making processes that led to systemic neglect. However, it is critical to note that this finding applies primarily to academic research, as it is not necessarily the responsibility, focus, or expectation of the government and independent watchdog organizations to incorporate theory into their research.

Last, the most notable limitation within this body of research is the dearth of data and perspectives from sexual assault survivors themselves. Relying on law enforcement's reporting of victim disengagement or non-cooperation is tremendously problematic if police are taking actions that, in turn, discourage victim engagement. The criminal justice system is rife with discrimination against marginalized groups; thus, neglect of survivors' voices in this research may further obscure gender, racial, ethnic, and socioeconomic disparities and exacerbate differential treatment of these groups. Thus, future research must make an effort to incorporate more sexual assault survivor perspectives as these are largely absent from the literature on SAKs yet provide invaluable data into SAK processing and, more broadly, sexual assault case processing in general. Those affected by sexual violence have the ability to offer unique and powerful insights into criminal justice processes and how these affect survivors in order to better inform police training, law enforcement investigation techniques, and collaborative processes across the disciplines that share responsibility for processing SAKs. However, maintaining victim confidentiality and anonymity poses a formidable barrier to identifying, contacting, and utilizing samples of sexual assault survivors. Nevertheless, concerted efforts must be made to be inclusive of survivor perspectives.

Conclusion

First stirred by the smoldering embers of public discontent that set ablaze the impetus for change, the issue of untested SAKs remains a cornerstone of ongoing reform within the criminal justice system. As research on this issue continues to emerge, scholars now navigate a changing landscape in which the value levied upon SAKs undergoes critical reassessment among criminal justice professionals. The findings of this study underscore that a constellation of agencies and actors, both within and outside the criminal justice system, share critical multidisciplinary responsibility for processing SAKs – from the initial collection of evidence, to submission to the crime lab, to forensic DNA testing, and onward into the courtroom. Above all, it is through ongoing research that scrutinizes and contextualizes the issue of untested SAKs, and sweeping organizational reforms that unmoor rape myths and support sexual assault survivors, that we can begin to halt the erosion of the pillars of justice effectuated by the decades-long disregard of SAK evidence in order to restore public safety and trust in the criminal justice system.

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