Examining Race and Sexual Assault Kit Submission:

A Test of Black's Behavior of Law Theory

by

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A Thesis Presented in Partial Fulfillment of the Requirements for the Degree Master of Science

Approved July 2016 by the Graduate Supervisory Committee:

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August 2016

ABSTRACT

Following a sexual assault, victims are advised to have a medical forensic exam and undergo a sexual assault kit (SAK) collection. The SAK is then held in police storage until it undergoes testing at a crime lab. Unfortunately, tens of thousands of SAKs in the United States remain untested. This thesis examines SAK submission by organizational decision makers in sexual assault case processing. Guided by Black's theory of law, this paper seeks to examine if white and minority victims systematically experience differential access to justice in terms of getting their respective SAKs submitted. Using data from a 1982-2012 Sexual Assault Kit Backlog Study in Los Angeles, California, the current study explores the relationship between race and SAK submission, legal (eg., case specific) and extralegal (eg., victim characteristics) variables across 1,826 backlogged SAKs and 339 non-backlogged SAKs. Results from the logistic regression analysis indicate that victims of nonstranger sexual assault are more likely to experience backlog of their SAK while victim race does not appear to affect SAK submission.

Implications for theory, research and criminal justice practice are discussed.

ACKNOWLEDGMENTS

I would like to thank my committee for their guidance and encouragement throughout the entire process of conceptualizing and producing this thesis.

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INTRODUCTION

Sexual assault is a crime characterized by underreporting and high case attrition (Spohn & Tellis, 2014). According to the latest summary report on the National Intimate Partner and Sexual Violence Survey (Black, Basile, Breiding, Smith, Walters, Merrick, Chen & Stevens, 2011), nearly 1 in 5 (18.3%) women reported experiencing rape at some point in their lives, but estimates from previous studies show that only 15 to 20 per cent of sexual assault victims will report to the police (Tjaden & Thoennes, 2006; Wolitzky-Taylor, Resnick, McCauley, Amstadter, Kilpatrick, & Ruggiero, 2011). Of the cases reported to law enforcement, less than half are eventually referred to prosecutors for further consideration (Campbell, 2008). The process of reporting sexual assault requires victims to recount the traumatic episode to police officers and if willing, to subject themselves to a lengthy physical examination which involves the collection of DNA samples from their bodies. Ideally, evidence collected is packed into a sexual assault kit (SAK), sent for DNA testing and extraction and results are uploaded into an FBI database known as CODIS (Combined DNA Index System), where it may be matched to an offender who has committed crimes in other states (Peterson, Herz, Johnson, Graziano, and Oehler, 2012).

In recent years, however, tens of thousands of SAKs across the country have been found untested in police storage (Peterson et al., 2012). According to Sacco and James (2015), SAK backlog refers either to untested SAKs which were never submitted to a laboratory for testing, or to untested SAKs which were submitted for testing but were delayed for testing for more than 30 days. Accounting for the backlog of untested SAKs is a goal shared by victim advocacy groups, scholars and criminal justice stakeholders.

While recent attention has been focused on police priorities relating to constraints in budgeting and the probative value of SAKs amongst other concerns, the effect of race on backlogged and non-backlogged SAKs has yet to be systematically studied. The current study proposes that the SAKs backlog provides a unique logistical opportunity to examine a disruption in the process of justice for sexual assault victims. As these are victims who have reported a crime and willingly submitted evidence to the police, the onus is on the police to proceed with case processing so as to apprehend offenders. The backlog of untested SAKs in police evidence rooms appears to support the notion that neither sexual assault incidents nor the victims of these crimes are taken seriously by the police (McKinley Jr., 2015; Reilly, 2015). The fact that some SAKs remain backlogged while others are submitted for testing must be subjected to empirical scrutiny.

This study seeks to explore if the race of the rape victim is a statistically significant predictor in the police decision to send her SAK for testing. Even though sexual assault affects women from all socio-economic and ethnic backgrounds, there may be merit to the idea that white and minority female victims experience differential access to justice. After all, racial differences are widely noted and studied in several other contexts within the larger criminal justice system from police stop-and-frisk practices to judicial sentencing decisions.

REVIEW OF LITERATURE

RACE AND CRIMINAL JUSTICE DECISION MAKING

The effect of race in the criminal justice system is of considerable interest to scholars (Gaub & Holtfreter, 2015). While racial disproportionality of minorities in prison is a visible phenomenon, less is known about the experiences of minority victims who seek

justice. Minority victims, and in particular, women of color, may face more challenges in reporting crime and achieving successful case outcomes (Crenshaw, 1991). As acknowledged earlier, one such crime already characterized by underreporting and high case attrition is sexual assault (Spohn & Tellis, 2012; Alderden & Ullman, 2012). This is ironic as case outcomes for sexual assault have also been significantly helped by developments in forensic evidence over the past two decades (Campbell, Patterson, Bybee & Dworkin, 2009; Johnson, Peterson, Sommers & Baskin, 2012). Minority victims who perceive racial bias, whether real or imagined, will be less encouraged to report crimes of sexual assault committed against them (Frohmann, 1991). As the statute of limitations often time out, many more cases of sexual assault may go unpunished (Campbell, 2008).

Since the discovery of untested SAKs is relatively new, the extant literature on sexual assault case processing research has only recently raised questions regarding the backlog of SAKs (Patterson & Campbell, 2012; Shaw & Campbell, 2013). Consequently, no studies have examined SAK submission as an organizational decision. Below, I review prior research on race and sexual assault case processing. This is followed by a section which summarizes the criminal justice system's response to sexual assault, with a focus on police decision-making. The third part of the review will contextualize medical forensic evidence and SAKs within the realm of police decision-making; recent quantitative findings and their limitations are discussed. The section then concludes by establishing how the current study fills a critical gap in our treatment of sexual assault crimes.

Race in Sexual Assault Case Processing

Race is an extralegal factor as it is not legally relevant to crime, and ideally should not count in determining whether a crime was committed against the victim (Alderman & Ullman, 2012). Several scholars have addressed the issue of race in sexual assault case processing by utilizing LaFree's sexual stratification hypothesis (Walsh, 1987; Spohn & Horney, 1993; Spohn and Holleran, 2001; Bouffard, 2000). The sexual stratification hypothesis conceptualized by LaFree (1980) proposes a stark reality; women are differently valued based on their race and that "rules of sexual access" dictate sexual contact between different races in a sexually-stratified market. He argues that sexual assault of white women by African-American men will result in harsher penalties relative to other racial combinations of the victim-offender dyad. For example, Walsh (1987) found that African-American men convicted for a sexual assault received prison sentences which were seven to twelve months shorter when their victims were African-American compared to when their victims were white. The application of the sexual stratification hypothesis has however been limited to black-white victim-offender dyads leading to Crenshaw's (1991) criticism that "black women become merely the means by which discrimination against black men can be recognized" (p. 1277).

Empirical support for the hypothesis remains mixed despite two decades' worth of sexual assault case outcomes research. In terms of victim race and case outcomes, Spohn and Horney (1993) found that sexual assaults involving white victims were significantly more likely to result in charges being dismissed as compared to those involving black victims, but cases involving white victims were also significantly more likely to result in conviction than cases involving black victims. Further research by Spohn and Holleran

(2001) showed that prosecutors were more likely to file charges in sexual assault cases involving white victims who were not acquainted with the offender. More recent research suggests that the effect of race on charging decisions is mitigated by prior relationship between victim and offender and victim characteristics such as "blame" and "moral character" (Holleran, Beichner & Spohn, 2008; Tellis & Spohn, 2008). Other studies report that victim race shows no predictive value in sexual assault case outcomes (Kingsnorth, Wentworth & Cummings, 1998; Bouffard, 2000; Alderman & Ullman, 2012; Tasca, Rodriguez, Spohn & Koss, 2013).

None of the studies mentioned above considered the submission of sexual assault kits, or lack thereof, as a decision-making point in itself. This inadvertently means that a critical gap in the literature remains: what explains sexual assault cases which were reported but never adjudicated due to backlogs of SAKs? The following section now turns to the criminal justice system's response to sexual assault from the time of its report, and address decision points undertaken by the police.

The Criminal Justice System's Response to Sexual Assault

Case processing within the criminal justice system is rooted within the organizational context of complaint filing (Frohmann, 1991). Organizational concerns affect police and prosecutorial decision-making processes as both of these groups are evaluated on factors external to the concerns of victims. Many police departments are judged by their clearance rates of reported crimes (Spohn & Tellis, 2012). Likewise, prosecutorial performance is measured by conviction rates (Frohmann, 1991; Alderman & Ullman, 2012). The police represents the first point of contact with the criminal justice system for many victims of sexual assault (Spohn, White & Tellis, 2014; Tasca et al., 2013; Kelley

& Campbell, 2013). Victims who report having been sexually assaulted are subject to scrutiny by criminal justice agents who regard their allegations with a high degree of suspicion (LaFree, 1981; Frohmann, 1991). The police do not operate in isolation but instead demonstrate a "downstream orientation" as officers are unwilling to refer cases lacking in "convictability" to prosecutors (Frohmann, 1991). Police officers themselves may also harbor certain preconceived notions regarding the "genuine" victim. While a majority of officers may not wholeheartedly subscribe to rape myth acceptance, a victim who reports drug or alcohol use prior to the assault is more likely to have trouble convincing police that she did not consent to sex (Dellinger Page, 2010).

Police decision-making has been receiving more attention from scholars in the field of sexual assault case processing (Spohn & Tellis, 2012; Spohn, White & Tellis, 2014; Spohn & Tellis, 2014). Literature that does exist is based on more current data, and considers various police reporting practices which were not previously studied. Broadly, police are tasked with deciding whether a crime has occurred; the amount of investigational effort required to identify the suspect; whether to arrest the suspect; the charges to file, if appropriate; and whether to refer the case to the prosecutor if need be (Spohn & Tellis, 2012). Embedded within this process are various decision-making points. In the context of sexual assault case processing, many scholars have observed a high case attrition rate. In Alderman and Ullman's (2012) study of 465 sexual assault cases reported to a large Midwestern police department, police deemed legitimate a majority of cases but made an arrest for only 35.2% of them. Overall, only 45 (9.7%) cases resulted in felony charges filed by the prosecutor's office. Their findings

demonstrate the attrition rate which increases as sexual assault cases are processed through the system.

In terms of decision-making, police have the right to "unfound" the charges (Spohn & Tellis, 2012; Spohn et al., 2014, Alderman & Ullman, 2012) and identify false reports (Spohn et al., 2014). In cases whereby the victim decides to withdraw from the investigation, police are also liable to report that she does not wish to pursue charges (Murphy, Edwards, Bennett, Bibeau & Sichelstiel, 2014). A common trend found in these studies is that police were clearing cases appropriately, most but not all of the time. Rarely did police provide a clear rationale for reporting why a victim no longer wished to pursue the case (Murphy et al., 2014). Again, perceived credibility of the victim and severity of the assault partially predicted these findings (Tasca et al., 2013; Spohn et al., 2014), suggesting that police reporting practices require more specific guidelines.

Police decision to arrest has been shown to be affected by legal and extralegal factors (Spohn & Tellis, 2014; Alderman & Ullman, 2012; LaFree, 1981; Bouffard, 2000). Legal factors relate to weapon use on the victim, presence of a witness and victim cooperation (LaFree, 1981; Bouffard, 2000; Spohn & Tellis, 2014). Conversely, extralegal factors that affect police decision to arrest include victim engagement in misconduct at the time of incident (LaFree, 1981; Alderman & Ullman, 2012), whether the victim was attacked by a stranger (LaFree, 1981; Bouffard, 2000) and even the location of the sexual assault (Bouffard, 2000). As police bring cases to the attention of prosecutors, detectives also tend to weigh whether the prosecutors will file charges based on victim and case characteristics (Frohmann, 1991; Spohn & Tellis, 2014). This 'downstream orientation' affects the decision to prosecute as prosecutors are promoted based on their conviction

rates; thus, they are less likely to want to pursue cases whereby juries are more likely to return a 'not guilty' verdict (Frohmann 1991; Alderman & Ullman, 2012). Prosecutors' decision to file charges have been shown to be affected by victim credibility (Frohmann, 1991), strength of evidence (Spohn & Holleran, 2001) and the seriousness of the assault (Spohn & Tellis, 2014).

New Forensic Evidence: Police and SAK Submission

Police investigators play a significant role in submitting a victim's SAK for testing (Campbell et al., 2009; Kelley & Campbell, 2013; Peterson et al., 2012). A SAK submission enables the processing of forensic DNA evidence which can significantly aid sexual assault prosecution outcomes and guilt determination (Spohn & Holleran, 2001; Campbell et al., 2009; Johnson et al., 2012; Kelley & Campbell, 2013). A sexual assault kit is formed from the several swabs taken from the body of a victim. The medical or nurse examiner has to verbally receive consent from the victim before proceeding to take each swab.

Due to the fact that thousands of untested SAKs have only been documented as recently as 2010, scholars have only recently attempted to understand why these kits were never submitted to a crime laboratory (Patterson & Campbell, 2012; Johnson, Peterson, Sommers & Baskin, 2012; Peterson et al., 2012). Recent studies examining to SAKs submission follow the same lines of inquiry undertaken by researchers who study police and prosecutorial decision-making. Victim and assault characteristics, from the age and race of the victim to the number of assailants and noted physical injuries (i.e. severity of assault), vary in their predictive utility (Patterson & Campbell, 2012; Campbell et al., 2009; Shaw & Campbell, 2013). Consistent with the idea of police and prosecutorial

concerns of clearance and convictability, is the significance of the relationship between post-assault hygiene and SAK submission (Patterson & Campbell, 2012). This is expected as sexual assault victims who present for examination are advised to refrain from activities such as bathing, which lowers the probative value of the SAK.

A problem with prior research examining victim race and SAK submission is that such studies rely on smaller samples based in Midwestern communities (Patterson & Campbell, 2012; Campbell et al., 2009; Shaw & Campbell, 2013). Consequently, samples are also relatively homogeneous in that African-Americans do not represent beyond 15% of the total sample (Patterson & Campbell, 2012; Campbell et al., 2009; Shaw & Campbell, 2013). Shaw and Campbell (2013) examined rates of SAK submission for 393 adolescent sexual assault cases, of which only 14.9% involved an African-American victim. They found that African-American females were actually twice as likely as White victims to have their SAK submitted to the crime lab. However, they cautioned that a lack of variability in the sample prevented them from drawing more substantive conclusions regarding any relationship between race and SAK submission. An additional problem with prior research on race and SAK submission is the lack of an overarching theoretical framework. As outlined further below, Black's theory of the behavior of law can be applied to address this particular void.

BLACK'S THEORY OF THE BEHAVIOR OF LAW

In contrast to the sexual stratification hypothesis, Donald Black (1976) offers a theoretical framework more suited to addressing racial disparities in police treatment of minority and white sexual assault victims. While many studies have focused on comparing black and white victims, Black's theory is general in nature and can be

applied to test for differential treatment within different minority groups vis-à-vis whites. According to Black (1976), law is a quantitative variable that can be measured along a continuum. For example, reporting a crime is "more law" than not reporting, an arrest is more law than reporting, a conviction is more law than an arrest and so on. He argues that the quantity of law at each level can be predicted by the five aspects of social life: stratification, morphology, culture, organization and social control.

Stratification is the "vertical aspect of social life" (Black, 1976) affected by the victim's and/or offender's position in the stratification system (p. 11). He argues that one's location in the stratification system decides whether law is activated. Race forms one of many indicators of status. The victim's position in the stratification system relative to the offender also affects the quantity of law. For example, reporting is more likely when victims are higher in the stratification system than the offender rather than the other way around. In a study conducted by Mastrofski, Reisig & McCluskey (2002) on police encounters with suspects, they found that suspects' sex, age, income and degree of neighborhood disadvantage were significant in predicting police disrespect. According to another test of Black's theory, the level of racial stratification was found to moderate the relationships between victim and offender race and the reporting of crime (Xie & Lauritsen, 2012). Areas with the largest black-white differences in wealth and segregation were associated with victims calling the police. The scholars call for future research to consider how the needs of African-American victims may outweigh their reluctance to call the police.

Morphology deals with the "horizontal aspect of social life" (Black, 1976, p. 37).

Research in this area mostly examines relational distance which refers to the degree of

intimacy between parties. Black believes that non-legal means are generally used to handle conflicts between intimates whereas law is more often utilized among strangers. The closer the relationship between the victim and the offender the less likely it is that a crime between them will be reported. In the context of sexual assault case processing research, several scholars continue to study reporting rates between intimates, strangers and acquaintances (Spohn & Holleran, 2001; Tasca et al, 2013; Kelley & Campbell, 2013). In an extensive study by Avakame, Fyfe & McCoy (1999) on crime victims' decisions to call for police intervention and police decisions to arrest, they found that relational distance correlated positively with the likelihood of calls to police and arrest. Similarly, married victims were more likely than their single counterparts to call police and to have their attackers arrested. The respondents had reported that they were victims of sexual-related crimes by people they knew and with whom they shared a casual acquaintance. These mixed findings support that more research is needed to study the effect of relational distance on the decision to call on the police, or to mobilize law.

Culture refers to "the symbolic aspect of social life, including expressions of what is true, good and beautiful" (Black, 1976, p. 61). As the quantity of culture increases, law also increases. One commonly used indicator of culture is education (Black, 1976). Black argues that a highly-educated person will be more likely to activate law than another with less education. For example, a study on the reporting behavior of fraud victims found that those possessing a graduate or professional degree were significantly more likely to report to the police than victims who had earned a bachelor's degree or lower (Copes, Kerley, Mason & Van Wyk, 2001). Another study by Holtfreter (2008) also found that white-collar offenders were less likely to be reported to the police and criminally charged

if they were more highly educated and held senior positions in their respective organizations. The theory suggests that more law will be used against the less educated, or alternatively, less law against the more educated when it comes to sentencing.

Organization refers to "the capacity for collective action" (Black, 1976, p.85). By this definition, a crime in which multiple persons are victimized is more likely to be reported and sanctioned against by the criminal justice system. Similarly, the greater the number of offenders, the less likely it is that the crime will be reported. Little research exists relating to the organization dimension. In an early test of Black's theory, Gottfredson and Hindelang (1979) found that the likelihood of reporting increased as the number of victims increased but found no association between the numbers of offenders and reporting. Another test of Black's theory which examined organizational victims' decision-making found that governmental agencies were more likely to mobilize criminal law in dealing with white-collar crime relative to non-profit and private sectors (Holtfreter, 2008).

In terms of social control, law is less likely to be activated in situations where informal social control is strong. The location and timing of the crime matters according to Black (1976). He argues that law is less active when other forms of social control are present. For example, if a crime is committed in a private setting such as the home, then a report is less likely to be lodged as opposed to one committed in public. For example, Avakame et al., (1999) found that the poor relied on the police more so than the middle-class who presumably have more access to resources to mobilize social control at the therapeutic and compensatory end of the spectrum, instead of the penal end.

Of the five dimensions of social life, the present research concerns itself most with stratification and morphology. Race is treated as a variable of stratification; African-American and Hispanic victims are conceptualized as being situated lower-placed than white victims in the stratification system. The relational distance between victims and their assailants will form one of the primary variables for this study as stranger rapes are more likely to gain the response of the criminal justice system than non-stranger rapes.

CURRENT STUDY

The current study fulfils a gap in research regarding police organizations' treatment of SAKs (Johnson et al., 2012; Patterson & Campbell, 2012; Campbell et al., 2009). The goal is to identify whether race is a statistically significant factor that predicts submission of a rape victim's SAK. This study improves on prior research in a number of important ways. First, secondary data from one of the most diverse and largest cities in the United States (i.e., Los Angeles) is used to test for the relationship between race and SAK submission. Second, by using Black's theoretical framework, the current study will contribute to the literature on police decision-making and racialized treatment of sexual assault crimes by applying a general theory to what has been an historically atheoretical field of study. Sexual assault case processing research has confirmed that several variables influence case outcomes (e.g. prior relationship, risky behavior). However, there are no studies specifically applying Black's theory to sexual assault kit submission. Building on prior work, the current study will control for several victim and assault characteristics in order to test the predictive utility of race in sexual assault kit submission.

SAK submission is an outcome which remains relatively unexplored in the research realm of police treatment of sexual assault crimes. This research seeks to answer the following research questions: What is the relationship between a sexual assault victim's race and the likelihood that her sexual assault kit will be submitted by the police organization? Does the victim-offender relationship significantly affect whether the SAK will be sent for testing?

The following two hypotheses have been derived from the stated research questions: Hypothesis 1: According to Black's dimension of stratification, sexual assault victims who are non-White are more likely to experience backlog of their sexual assault kits. Hypothesis 2: According to Black's dimension of morphology, sexual assault victims who are assaulted by a stranger are less likely to experience backlog of their sexual assault kits.

METHODOLOGY

<u>Data</u>

This research uses secondary data from a 1982-2012 Sexual Assault Kit Backlog Study in Los Angeles, California (Peterson et al., 2012). This dataset is available from the Interuniversity Consortium for Political and Social Research (ICPSR) as it was funded by the National Institute of Justice. It is the first study of its kind to evaluate the problem of backlogged sexual assault kits (SAKs) in the United States. However, this particular dataset is restricted. Consequently, several steps were involved prior to accessing the dataset. First, an Institutional Review Board application was completed and had to be approved before a second round of application to the National Archive of Criminal Justice Data (NACJD) which manages the ICPSR. The application forms require the

researchers to detail several steps to ensure that the dataset will only be accessed and stored securely in a location only known and available to them. These steps are undertaken to ensure that the data, even though de-identified, does not become compromised and that the victims' information are kept confidential (Rodgers & Nolte, 2006). Since this research is concerned with the effect of race on SAK submission, the use of a dataset is advantageous in enabling access to large-scale data relating to victim and assault characteristics.

The Sexual Assault Kit Backlog Study was undertaken against a backdrop of public discontent with the tens of thousands of untested SAKs across the country. As a major city, Los Angeles drew interest for its SAKs backlog from public officials and non-governmental organizations such as Human Rights Watch (Peterson et al., 2012). The agencies involved in this study then decided to test all backlogged SAKs for DNA evidence. This decision presented a unique research opportunity to the project team to collect data on backlogged and non-backlogged cases from the Los Angeles Sheriff's Department (LASD) and the Los Angeles Police Department (LAPD). These two agencies provided the lists of backlogged and non-backlogged SAKs. According to the guidelines set by the research team, a SAK was placed in the respective agency's backlog if it had been collected in the course of an investigation and went untested by the crime laboratory by November 1, 2008 (Peterson et al., 2012).

The LAPD cases were drawn from a single municipality whereas LASD cases were drawn from many different municipalities within Los Angeles County (Peterson et al., 2012). The great majority of backlogged SAKs were held in police storage, and each agency maintained its own set of backlogged cases and case numbering system. The

timeframe for cases yielding the SAKs examined in this study ranged from 1982 to 2009, with 87.6% of cases falling between 2000 and 2008 (Peterson et al., 2012). Fluctuations in the official number of backlogged cases occurred as some cases were newly discovered while some were found to be non-backlogged. The LAPD and LASD initially reported 6132 and 4763 backlogged SAKs respectively. The team drew a 20% random sample which yielded 1170 cases from the LAPD and another 840 cases from the LASD. After excluding cases which involved juvenile suspects and those which were not sent for external laboratory testing, the final coded case sample amounted to a total of 1948 backlogged SAKs (Peterson et al., 2012).

One of the primary objectives of the study was to determine judicial outcomes of backlogged SAKs prior to and after testing (Peterson et al., 2012). In order to determine if testing of SAKs on a timelier basis would be associated with different judicial outcomes, an additional sample of non-backlogged cases from the LAPD and LASD inhouse laboratories was taken. Unlike the backlogged sample, the research team believed that the non-backlogged sample "would be more representative of all sexual assaults currently being investigated in these jurisdictions and where SAK evidence was collected" (Peterson et al., 2012, p. 39). The team subsequently obtained a list of non-backlogged SAKs, tested in-house between the dates of January 1, 2009 and August 1, 2010, from both the LASD and LAPD (Peterson et al., 2012). The LASD non-backlog case population consisted of 220 cases while the LAPD reported 209 such cases. However, the total number of non-backlogged cases was reduced to 371 after excluding ineligible cases and cases that could not be located (Peterson et al., 2012).

The 371 non-backlogged cases were matched with a random subsample of 371 backlogged cases (taken from the initial major sample of 1,948 backlogged SAKs) to form the backlogged and non-backlogged criminal justice disposition sub-samples. Even though the time periods of both sub-samples are not exactly the same, 80% of the backlogged cases in the disposition sub-sample fall in between the years of 2000-2008 which does not render it outdated. In fact, it is more important to examine if the backlogged disposition sub-sample is comparable to its non-backlogged counterpart. In order to make a meaningful comparison between the backlogged SAKs and the non-backlogged sub-sample, the current study is required to control for time. The characteristics of the two sub-samples show similarities in terms of the average age of the victim, racial composition of victims and the modal number of a single assailant (Peterson et al., 2012).

Final Sample

The current study is limited to female sexual assault victims. Although a small number of male sexual assault victims are included in this dataset, their cases are dropped from the sample of 1,948 backlogged SAKs and 371 non-backlogged SAKs. Thus, the final sample comprises 1,826 backlogged SAKs and 339 backlogged SAKs belonging to female sexual assault victims (Peterson et al., 2012).

Dependent Variable: SAK submission status

The dependent variable in this research is whether or not the SAK is backlogged. This is coded as a binary variable (1=yes; 0=no). Conceptually, a SAK is backlogged when it remained in storage and was not submitted for testing. Since this research is limited by the guidelines set by the study's investigators, a SAK is considered backlogged if it was

untested by the crime laboratory by November 1, 2008 (Peterson et al., 2012). However, the study also considered a backlogged SAK to be one where the file had a backlog grant sticker on its front and paperwork indicating that it was backlogged (Peterson et al., 2012). Failure to meet either one of these criteria meant that the case would not be included in the sample. The backlogged SAKs were eventually outsourced to an external laboratory to be tested whereas the non-backlogged SAKs had all been tested in the inhouse LAPD and LASD crime laboratories (Peterson et al., 2012). The physical inclusion of a backlog grant sticker and paperwork enables the researcher to ascertain that a case is indeed backlogged without solely relying on the list obtained from the agencies (Peterson et al., 2012). These measures increase content and face validity as a backlogged SAK is further subject to physical markers. These indicators that identify a SAK as backlogged are also reliable as they are consistent with the team's operationalization of backlog. Independent Variables: Extralegal factors

Stratification

The key independent variable to measure Black's indicator of stratification is the race of the individual sexual assault victim. Based on the dataset and accompanying study report, it appears that race is conflated with ethnicity ("Race/Ethnicity"); followed by categories labelled "African-American" (24%), "Caucasian" (27.9%) and "Hispanic/Latino" (39.0%) (Peterson et al., 2012). Since the percentages given add up to 90.9%, ethnicity is treated the same as race and there is no need to consider if the category "Hispanics" is initially subsumed under either "Caucasians" or "African-Americans". The codebook for the Study does show other minority racial categories (e.g. Native American, Asian). Even though the hypotheses are focused on the differences

between non-White and White sexual assault victims, Hispanic/Latino victims are included in the final analysis. This study includes two dichotomous variables to represent the racial categories (White, non-Hispanic=0; Non-white minority=1).

Morphology

According to Black (1976), morphology is one of the key indicators of the behavior of law. As acknowledged earlier, morphology is represented by the concept of relational distance. Those who are victimized by their intimates are considered to be less likely to mobilize law. On the other hand, if the assailant or offender is a stranger, then more law—be it police arrest or the victim decision to call the police—is expected as an outcome. In the context of this study, SAK submission can be significantly affected by whether the victim was assaulted by a stranger. In cases whereby the victim knew the assailant, SAK submission and testing may be considered irrelevant since the suspect is already known to the police and/ or prosecutors. Conversely, a victim who reports being attacked by a stranger may get her SAK prioritized for testing as the only way to find her assailant may be through yielding a DNA profile.

The dataset does not provide specific guidelines for considering whether an assailant is a stranger to the victim. For instance, it is not clear if the victim has to know the assailant's last name or other personal particulars for the assailant to be considered as a non-stranger. For the purpose of this research, a stranger assailant will be coded as "1" whereas a non-stranger assailant will be coded as "0". Although the face validity of this measure is high, the content validity is somewhat questionable. However, this factor remains an important consideration in understanding the probative value of a SAK.

Control Variables: Legal factors

Factors affecting organizational decision-making require that case characteristics need to be taken into account. Three relevant variables based on prior research are presence of injuries, use of a weapon and victim's voluntary use of alcohol and drug consumption (Dellinger Page, 2010; Frohmann, 1999; Kelley & Campbell, 2013). Presence of injuries, use of a weapon and victim's prior use of alcohol and/or drugs follows a dichotomous coding scheme (1= yes, 0= no). According to Black (1976), case seriousness depends on the status of the offender relative to the victim. Case characteristics are not a consideration in case seriousness. Stated differently, a case is considered more serious if a high-status individual is victimized by a low-status offender. Conversely, a case is considered less serious if the high-status individual offends against a low-status victim. However, several assault case processing scholars have found factors such as injuries and weapon use to affect police decision-making in pursuing cases of sexual assault (Spohn & Holleran, 2001; Campbell et al., 2009; Johnson et al., 2012; Kelley & Campbell, 2013). Many of their studies show that injuries and weapon use predict case seriousness and thus such measures need to be accounted for in this study.

Victim-blaming is measured by victim's voluntary use of alcohol and drug consumption. While Black's framework does not address victim-blaming specifically, this idea of victim-blaming relates to the police being less likely to mobilize law as the victim is seen as being at fault if she had been consuming alcohol or drugs willingly prior to the assault. For example, Alderden & Ullman (2012) found that police officers were more accepting of rape myths after viewing vignettes of a woman sitting at a bar and drinking a cocktail as opposed to vignettes of the same woman sitting by a soft drink.

More recently, sensational media cases such as the one involving Brock Turner, a student and star athlete at Stanford University, who was only handed down a six-month jail sentence for sexually assaulting an intoxicated and unconscious woman he met at a fraternity party, have highlighted the legal system's responses to notions of culpability and consent (Fuller, 2016). Hence, voluntary alcohol and drug consumption is a relevant case characteristic to control for.

Second, variables affecting the probative value of SAKs are controlled for as well. Probative value refers to the perceived utility of testing a SAK for forensic evidence. This study outlines two separate variables which have the potential to significantly affect SAK submission. They are: victim engagement in post-assault hygiene activities such as bathing or even brushing their teeth and the post-coital interval (PCI) (Peterson et al., 2012).

Victim engagement in post-assault hygiene activities can significantly lower the probative value of SAK evidence. Consequently, detectives and/or prosecutors may decide against submitting the SAK for testing especially if resources and budgeting are limited. Based on the codebook, post-assault hygiene activities are broadly defined as any activity which involves the victim possibly removing evidence from her body after the alleged sexual assault. This includes relatively minor activities such as the brushing of one's teeth or gargling. Since these activities occupy a large range, this research will treat victim engagement in post-assault hygiene activities as a binary variable. As long as the victim engaged in at least one such activity, the research codes this as "1". Conversely, the complete lack of engagement in any post-assault hygiene activity is coded as "0". The content and face validity for this variable is high as there is no discrimination between

minor and major hygiene activities post-assault. As long as the victim engaged in one such activity, the probative value of the SAK is potentially lowered as a result and treated as such.

The post-coital interval (PCI) can also negatively affect the probative value of the SAK. The Study treats PCI as the number of hours that have passed since the assault until the victim presents herself for SAK collection. Ideally, a victim should report sexual assault as soon as possible after the attack. The longer she waits, the higher the PCI and this subsequently lowers the potential amount of viable forensic evidence. A higher PCI is also related to the above-mentioned variable of victim engagement with post-assault hygiene activities as victims are more likely to have engaged in any one such activity prior to SAK collection. In other words, a victim who may have waited a week to report the assault is more likely to have showered and/or changed her clothes, thus lowering her SAK's probative value. Even if the victim has a higher PCI without engaging in any post-assault hygiene activity, the probative value of the SAK is still perceived as being lower because detectives and/or prosecutors are less motivated to request testing in light of the greater loss of viable forensic evidence.

The accompanying report did not specify the values for what is considered as a higher or lower PCI. For the purpose of this research, a PCI is treated as "low" as long as it falls under 24 hours, which is a full day after the alleged sexual assault experienced by the victim. A "high" PCI is considered as any value above 24 hours. Thus, the victim's PCI will be coded as a binary variable consisting of a low PCI ("0") and a high PCI ("1"). The content and face validity for these measures is high as the PCI is given a stringent criteria to fulfill.

In addition to the control variables relating to legal factors, the current study also takes into account the victim's age and offender race. Victim age is an important demographic variable to control for as it has the capacity to affect perceptions of severity of sexual assault. Besides race, it is the only other demographic information available in the dataset. Victim age is coded continuously in years as in the original dataset. Offender race also needs to be controlled for as offender race also can affect SAK submission. Similar to victim race, offender race is coded dichotomously (White, non-Hispanic=0; Non-white minority=1).

ANALYTICAL STRATEGY

Since the dependent variable is a binary outcome (1=backlogged; 0=non-backlogged), logistic regression is used to test the relationships between race, relational distance and SAK submission status. Given that most of the relevant variables have some missing data ranging between 10-50%, multiple imputation (MI) is performed to handle the missing data. Otherwise, any models fitted will likely have biased parameter estimates (Graham, 2009). A study by Graham and Schafer (1999) show that multiple imputation is still successfully used in samples with as much as 50% missing data. They argue that it is not so much the amount of data that is missing that is problematic, but rather that missingness further depletes available data for researchers. To illustrate, one MI simulation study looked into constructing a risk model for cardiac patients in the UK but only 32% of the case observations were complete in the national database (Ambler, Omar & Royston, 2007). The researchers found that the use of MI produced the least biased estimates and highest-quality predictions. Of all the techniques to handle missing data, multiple imputation is the most appropriate for this study as a single imputed variable is never

used and variance estimates are calculated based on the uncertainty surrounding parameter estimates (Allison, 2002). Following the multiple imputation process, complete data were available for 2,135 cases.

In the original study by Peterson and colleagues (2011), race is treated as non-binary owing to the diversity and mutually-exclusive nature of the racial categories documented. While African-Americans and Hispanics form the largest minority categories, other smaller minority observations also exist but were removed from the final sample prior to multiple imputation as their cells were too small to provide statistical power (1 Native American and 12 Asian-American victims). For the purpose of this study, White is treated as the reference group (coded as "0") while African-Americans and Hispanics are combined into a new racial minority category (coded as "1").

All other variables (dependent and control) with the exception of the victim's age are treated as binary: the offender's race, victim's use of alcohol and drug consumption, presence of injuries, use of a weapon, backlogged versus non-backlogged for SAKs, victim engagement in post-assault hygiene activities, the post-coital interval (PCI) and relational distance.

Table 1. Summary Statistics for Variables Used in Analyses (N = 2135)

Variables	Mean or %	SD
Backlogged	84%	
0 = no, 1 = yes		
Victim Characteristics		
Racial minority	71%	
0 = no, 1 = yes		
Age	22.65	12.39
Respondent age in years		
Offender Characteristic		
Racial minority	86%	
0 = no, 1 = yes		
Case Characteristics		
High post-coital interval	32%	
0 = no (0-24 hours), 1 = yes (> 24 hours)		
Stranger	29%	
0 = no, 1 = yes		
Weapon Use	4%	
0 = no, 1 = yes		
Injury	76%	
0 = no, 1 = yes		
Post-assault hygiene activity	90%	
0 = no, 1 = yes		
Victim's alcohol/drug use prior to assault	41%	
0 = no, 1 = yes		

RESULTS

Table 2 presents the bivariate results for the variables used in this study. Prior to running the full logistic multivariate regression model, bivariate correlations were examined to observe any significant relationships among the predictors. Given that several predictors are significantly correlated with each other (p<0.05), this provides preliminary support for testing the theorized hypotheses. Tests for multicollinearity that included the dependent, independent and control variables showed that this was not a concern. Based on the bivariate results, none of the values are larger than 0.80. A check of the variance inflation factors (VIFs) show that none of the values exceed 4. The highest VIF at 1.35 belongs to victim race. The condition index is 14.38, which further confirms that multicollinearity is not an issue.

	ations	
	Corre	
	Bivariate Correlations	
	Table 5	
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1. SAK backlog	ī	7	B	4	5	9	7	∞	6	10
)	1									
2. Racial minority victim	036***	;								
3. Victim age	.016**	19***	1							
4. Racial minority offender	02*	.44**	.023***	;						
5. Postassault hygiene activity	.015*	***/0'-	03***	04**	1					
6. Victim alcohol/drug use	.013	2**	.19**	16***	.03***	;				
7. Post-coital interval	.021**	12***	***80'-	.024**	.024*** .0822***	.019**	ł			
8. Stranger	051***	01		033***	.14***033***10***		.053***071***	1		
9. Weapon use	014*	.02***	***20	.037***	.037***045***	016*	016* .082***	.015*	;	
10. Injury	.040***	012	.11**	011	900:-	***90`	***90`-	.02**	***90	;

*p<.05 **p<.01 ***p<.001

In order to assess the relationships between SAK backlog and the key independent and control variables, a full logistic multivariate regression model was run using *Stata 14*. The F-statistic which compares the model to another model with only the constant as a predictor is 0.46, indicating that it is not significant. Although the model is overall not significant, one of the predictors –whether a victim was assaulted by a stranger— is still significant (p=.031). Based on the odds ratio, a victim who was attacked by someone she knew would be 1.32 times more likely to experience backlog of her SAK.

Other than the one significant predictor, no significant relationships exist between SAK backlog and the control variables informed by prior literature to affect police action in sexual assault case processing research: if an examiner detected injury on the victim (p=.24); if the offender was from a racial minority (p=.93); if the victim had engaged in post-assault hygiene activity (p=.85); if the victim had used drugs/alcohol (p=.81); if a weapon was used (p=.35); if the post-coital interval was high (p=.83) and the age of the victim (p=.18). Similarly, the other key independent variable relating to victim race is not significant (p=.24).

Table 3. Predictors of Sexual Assault Kit Backlog: Results of the Logistic Regression

Analysis based on Imputed Data

Variables	b	S.E	Exp(B)	р
Victim characteristic				
Race	24	.20	.79	.24
Age in years	003	.005	1.00	.56
Offender characteristic				
Race	.023	.27	1.02	.93
Case characteristics				
Offender used some type of weapon	07	.41	.93	.86
Presence of injury on victim	23	.20	.79	.24
Victim engaged in post-assault hygienic	.048	.19	1.05	.81
activity	28	.13	.76	.031*
Offender was a stranger to victim	.065	.19	1.07	.63
Victim used alcohol/drugs before assault	.038	.18	1.04	.83
SAK collected later than 24 hours after assault	2.05	.34	7.82	
Constant				

^{** =} p < .01; * = p < .05; + = p < .10

Thus, partial support exists for the second hypothesis relating to the victim-offender relationship, but not the first hypothesis based on victim race and SAK submission. Overall, these results run contradictory to prior literature on sexual assault case processing. Even though prior research indicates mixed support for the effect of race on case outcomes, factors such as weapon use or victim injury have been significant in similar studies (Spohn, White & Tellis, 2014; Tasca et al., 2013; Kelley & Campbell, 2013). The implications of these results are discussed below.

DISCUSSION

Building on prior research, this study highlights sexual assault kit submission as a relevant organizational decision in seeking justice for victims. It provides partial support for Black's behavior of law theory in that morphology (i.e. victim-offender relationship) is significant. Based on the findings, stranger rapes result in more law than rape between non-strangers since a SAK is more likely to be backlogged if the victim knew her attacker. This is in line with prior research on police treatment of sexual assault cases; police investigators have been known to question victims' credibility and motives in particular scenarios such as date rape, in addition to clearing cases due to perceptions of convictability (Frohmann, 1991; Pattavina, Morabito & Williams, 2016). The findings here suggest that there may be more to thinking about stratification than simply looking at race. More data relating to victim characteristics in the current study would have been useful. The non-significance of race in the current study is still important, especially in light of current police relations with Black communities in the United States. The findings support that SAK submission fortunately does not vary by race. Further, criminal

justice practitioners can draw upon this study to inform future policies on SAK testing for sexual assault victims.

The issue of police prioritizing stranger rapes over those committed by nonstrangers has far-reaching consequences. While it appears sensible for police organizations to use scarce resources to pursue unknown suspects, such practice also means that victims who knew their attackers are more likely to have their cases stagnate or even exceptionally cleared (Pattavina et al., 2016). A recent study by Campbell, Pierce, Sharma, Feeny and Fehler-Cabral (2016) found that forensic testing outcomes of SAKs varied only very slightly between stranger and nonstranger rape cases. Stated differently, this means that regardless of the victim-offender relationship, there were no significant differences in the number of 'hits' on the CODIS database. In fact, testing SAKs belonging to nonstranger cases not only confirmed the victim's identification of the suspects, but also linked the suspects to serial rapes committed elsewhere in the United States (Strom & Hickman, 2016; Spohn 2016; Wells, 2016).

The results presented here suggest several directions for future research. The choice of variables used in this study was informed by prior literature in sexual case processing research. Although the dataset was able to provide this study with data on relevant case characteristics such as the post-coital interval, certain information was not included or even masked. For example, based on prior research, victim cooperation plays an important role in getting police to make an arrest or call the suspect in for questioning (Murphy et al., 2014; Spohn & Tellis, 2012). In the context of this study, information relating to police interaction with victims was not available and thus could not be included. Similarly, data on police agency were masked to maintain non-identifiability of

the victims, so it was not possible to test for between-agency differences. In sum, the study was limited due to reliance on secondary data. Future studies can address this by collecting original data on sexual assault kits and their corresponding police reports and case notes. Scholars can then observe variables measuring other indicators of Black's theory such as culture (e.g. highest education attained by victim) and organization (e.g. size of police department handling SAK submission). By testing Black's theory of behavior of law on sexual assault kit reporting processes and outcomes, future research can gain by considering the relevance of such a framework on contexts outside of previous studies such as domestic violence (Hickman & Simpson, 2003).

In terms of policy, police organizations should consider that clearing sexual assault kits by submitting and testing them can be beneficial to overall clearance rates of sexual assault cases. A SAK collection happens only after a police report is made. According to Gottfredson & Hindelang (1979), police may appear to be the gatekeepers to the criminal justice system but mobilization of law truly begins with the victim decision to report. The results of this study supports the notion that police submission of SAKs needs to depart from evaluating priority based on whether the victim knows the attacker. Considering that the backlog of a SAK negatively affects the progression of a victim's case, police organizations should continually and actively find ways to deal with incoming SAKs instead of placing them in storage. Police departments should not be deterred by lack of resources to pursue justice for sexual assault victims. Since police organizations have a common goal of maximizing clearance rates, it makes sense to test SAKs regardless of the victim-offender relationship so as to yield CODIS hits that establish if an offender has multiple victims. More importantly, testing a victim's SAK allows the police to

corroborate the identity of the suspect, especially in the case of nonstranger rape. Police investigators could also undergo sensitivity training to make themselves aware of their own biases and how they project themselves to victims who may feel discouraged as a result.

This study is an important first step toward a more complete understanding of how race and the victim-offender relationship relates to the submission of sexual assault kits by the police in the United States. While race was not significant in this study, it remains an important measure of stratification in future tests of Black's behavior of law theory. The victim-offender relationship especially in the context of sexual assault case processing research demonstrates that law does vary and is exercised differentially based on the parties involved.

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