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Predicting Sexual Assault Kit Submission Among Adolescent Rape Cases Treated in Forensic Nurse Examiner Programs

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Abstract

Following a sexual assault, victims are usually advised to have a medical forensic exam and sexual assault forensic exam kit (SAK). Once completed, the SAK is to be transported by law enforcement to the crime lab for analysis. However, many kits are never transported to the crime lab, thereby preventing forensic evidence obtained in the kit to be used during the prosecutorial process. The current study examined rates of SAK submission for 393 adolescent sexual assault cases in two Midwestern communities and explored what factors predicted law enforcement officers' submission of SAKs to the crime lab for analysis. Findings reveal that more than 40% of the adolescent cases did not have their SAK submitted, and several factors, including the age and race of the victim, the number of perpetrators in the assault, and the number of assaultive acts, predicted SAK submission. Implications for SAK community protocols are discussed.

Keywords

rape, sexual assault, sexual assault kit submission, law enforcement investigations, forensic evidence

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Adolescence is a time of increased risk for sexual assault. National studies have found that 7% to 11% of adolescent females ages 12 to 17 years old have reported being forced to have sex (Eaton et al., 2006; Finkelhor, Turner, Ormrod, & Hamby, 2009; Kilpatrick, Saunders, & Smith, 2003) and adolescent females are 4 times more likely to be sexually assaulted as compared with older females (Snyder & Sickmund, 2006). Victims who seek postassault services from the criminal justice and/or medical system are usually advised to have a medical forensic exam and sexual assault forensic exam kit (SAK). Also known as a "rape kit," the SAK contains biological samples (e.g., oral, vaginal, anal swabs, hair samples) that could help establish the elements of the crime. However, in multiple jurisdictions across the country, many SAKs do not reach the crime lab for analysis (Human Rights Watch, 2009, 2010; Tofté, 2009). To date, most of the attention regarding unsubmitted SAKs has focused on *adult* cases, but given the high rates of sexual assault among *adolescents*, it is important to examine rates of SAK submission for these very vulnerable victims. Therefore, the purpose of the current study was to document rates of SAK submission in adolescent sexual assault cases and to explore what factors predict law enforcement officers' submission of kits to the crime lab for analysis. A brief literature review of the SAK, its use, rates of SAK submission, and factors influencing its submission by law enforcement to the crime lab is provided.

Following a sexual assault, victims can seek out services from the criminal justice and/or medical system. Regardless of whether victims choose to access either the medical system or the criminal justice system following a sexual assault, it is likely that they will ultimately have contact with both as the two systems often operate interdependently in practice (Martin, 2005). When victims present to the hospital following a sexual assault, they are frequently required or strongly encouraged to report to the police. Alternatively, if they choose to seek criminal justice services first, reporting to the police initiates the protocol to collect forensic evidence with a medical forensic exam conducted by a health care provider (Martin, 2005). Most sexual assault victims do not receive medical care following a sexual assault (Hanson et al., 2001; Resnick et al., 2000; Tjaden & Thoennes, 2000; Zinzow, Resnick, Barr, Danielson, & Kilpatrick, 2012), and some victims are more likely to seek out services than others (e.g., see Hanson et al., 2001; Zinzow et al., 2012). The majority of sexual assault victims who choose to seek medical care services do so for physical and psychological health concerns (Campbell, Bybee, Ford, Patterson, & Ferrell, 2009) and may be seen in forensic settings or more traditional emergency departments. However, the medical forensic exam frequently dominates their experience with the medical system, with a particular emphasis on the SAK and evidence collection (Martin, 2005). This process

can include collection of the patient's clothing, a complete head-to-toe physical examination, specimen collection from body surfaces such as skin, hair, and nail clippings, a visual assessment of the genitals for trauma, specimen collection from points of contact with the perpetrator, and blood draw and urine specimens for drug analysis (Campbell, Patterson, & Lichty, 2005; Department of Justice, Office on Violence Against Women, 2013).

The SAK has tremendous potential to aid legal system personnel in the investigation and prosecution of reported sexual assaults—if the kit is submitted to the lab and tested. Human Rights Watch has documented that many communities have large numbers of unsubmitted kits in police storage. For example, Los Angeles County had more than 12,669 unprocessed medical forensic exam kits, and more than 10,000 unprocessed SAKs were found in a Detroit police storage facility (Tofte, 2009). In 2010, Human Rights Watch noted that only 1,474 of 7,494 medical forensic exam kits booked into evidence since 1995 in Illinois were confirmed as tested. As such, nearly 80% of SAKs in Illinois have not been tested. For example, Patterson and Campbell (2012) found that more than 40% of adult SAKs collected in a Midwestern Sexual Assault Nurse Examiner (SANE) program¹ were not submitted to the crime lab for analysis, and, in a national-scale study, Strom and Hickman (2010) estimated that there are 27,595 unsolved rape cases across the nation that have untested forensic evidence.

Given the staggering rates of unsubmitted SAKs, it is important to examine the reasons as to why law enforcement may or may not submit a kit to the crime lab for testing. This has only recently been the subject of research, so little is known about this issue. Strom and Hickman (2010) surveyed a nationally representative sample of law enforcement agencies in an effort to determine potential explanations for these unsubmitted kits. Forty-four percent of the agencies indicated that they did not submit evidence to the crime lab for processing if a suspect had not been identified. Agencies also reported that they did not submit evidence to the crime lab for processing if the suspect was adjudicated without forensic testing (24%), the case was dismissed (19%), they did not think the evidence was useful (17%), analysis was not requested by the prosecutor (15%), or the suspect had been identified but not charged (12%). In a regional study, Patterson and Campbell (2012) found that cases in which the victim engaged in postassault actions, such as bathing, were less likely to be submitted to the crime lab. SAKs with documented physical (nonanogenital) injuries were more likely to be submitted to the crime lab as were cases that were investigated by law enforcement agencies that had strong collaborative relationships with their SANE programs. Taken together, the results of these two studies suggest that law enforcement personnel's decision to submit a SAK is frequently dependent on the status of the suspect (i.e., if they have been identified,

charged, and/or adjudicated), actions taken by the prosecutor's office (i.e., request for SAK analysis, charges filed, and/or case dismissed), and the perceived quality of the available evidence.

Aside from these studies by Strom and Hickman (2010) and Patterson and Campbell (2012), there is no additional literature on what factors influence law enforcement personnel's decisions to submit a SAK for crime lab analysis among adult populations, and there are no studies that examine SAK submission in adolescent cases. The purpose of the current study was to determine the rate of SAK submission among adolescent sexual assault cases in two Midwestern communities and to investigate what factors influenced law enforcement personnel's decision to submit a SAK for analysis. Consistent with prior research on law enforcement decision making in sexual assault cases, we examined three sets of predictors. First, victim characteristics such as age and race have been found to affect law enforcement's perceived victim credibility (Rose & Randall, 1982) and overall case progression in the criminal justice system, including warranting or charging the suspect (Campbell, Greeson, Bybee, & Fehler-Cabral, 2012; Frohmann, 1997; LaFree, 1981). Therefore, we explored whether such factors would also be influential in the decision to submit a SAK for analysis. Second, assault characteristics, such as the relationship with the perpetrator (Bachman 1998; Campbell et al., 2009; Kerstetter, 1990; LaFree, 1989; Spohn & Spears, 1996), the type(s) of assaultive acts (Campbell et al., 2009; Frazier & Haney, 1996), the use of drugs or alcohol by the victim (Campbell et al., 2009; LaFree, 1981; Rose & Randall, 1982; Kerstetter, 1990; Schuller & Stewart, 2000), and tactics used by the perpetrator (LaFree, 1981; Kerstetter, 1990) have been found to influence how thoroughly a case is investigated, if a case is classified as unfounded (Bachman 1998; Kerstetter, 1990; LaFree, 1989; Spohn & Spears, 1996), if a suspect is questioned (Frazier & Haney, 1996), if a suspect is arrested (LaFree, 1981; Kerstetter, 1990), and if the case is referred to the prosecutor (Campbell et al., 2009). These assault features may also influence police decisions regarding SAK submission. Finally, evidentiary case characteristics, including injuries sustained during the assault (Campbell et al., 2009; Frazier & Haney, 1996) and the time lapse between the assault and the exam (Campbell et al., 2009; LaFree, 1981) have been shown to influence whether a suspect is questioned (Frazier & Haney, 1996), whether a suspect is arrested (LaFree, 1981), whether the SAK is submitted to the crime lab in an adult population (Patterson & Campbell, 2012), and how far the case progresses in the criminal justice system (Campbell et al., 2009). Again, consistent with prior research, we examined how these factors may also influence decisions regarding SAK submission.

Table 1. Adolescent Demographics by Site.

	Program Site A (<i>N</i> = 246)	Program Site B (<i>N</i> = 147)	Combined (<i>N</i> = 393)
Gender			
Female	97.2%	95.2%	96.5%
Male	2.8%	4.8%	3.5%
Age			
13-15 years old	58.1%	64.6%	60.5%
16-17 years old	41.9%	35.4%	39.5%
Race			
White/Caucasian	87.9%	67.3%	80.3%
African American	9.7%	23.8%	14.9%
Latino/a	0.4%	2.0%	1.0%
Bi/Multiracial	1.2%	6.1%	3.0%
Other	0.8%	0.7%	0.8%
Disability status			
Any disability	17.9% ^a	16.3% ^a	17.3% ^a
Serious mental illness	9.7%	6.1%	8.4%
Learning disability	7.3%	9.5%	8.1%
Developmental delay	0.8%	4.1%	2.0%
Physical disability	1.6%	1.4%	1.5%

^aSome adolescents had more than one disability.

Method

Participants

Adolescent sexual assault cases were drawn from two SANE programs in two Midwestern communities from the program start dates (Program A started in February, 1998; Program B started in September, 1999) through November 31, 2007. Cases in which (a) sexual contact occurred or was suspected, (b) the patient received a full forensic exam, including a patient history and SAK evidence collection, (c) the patient was 13 to 17 years old at the time of the exam, and (d) the assault occurred in the respective county and was reported to law enforcement were eligible for inclusion, which produced an initial sample of 395 cases. Kit submission data could not be determined for two cases, yielding a final sample size of *N* = 393. The adolescent demographics for all cases included in the study, by site and overall, are presented in Table 1.

Procedures

The SANE program records were coded by two research assistants for victim characteristics, assault characteristics, and medical forensic exam findings. The coding framework was developed based on the principal investigator's previous study on the predictors of adult sexual assault prosecution and through consultation with the SANE program directors to ensure its relevance and applicability to adolescent cases (Campbell, Bybee, Ford, Patterson, & Ferrell, 2009). Thirty percent of the cases were coded by both research assistants to ensure interrater reliability. Coding was monitored to maintain reliability of $\kappa > .80$, with a final κ across all variables = .98. To access crime lab records, the list of victim names, complaint numbers, and assault dates from the SANE records were submitted to the state crime lab. For each case, crime lab personnel indicated whether a rape kit had been submitted.

Measures

The dependent variable in these analyses was whether the SAK has been submitted to the crime lab. Each case was coded for the specific month in which the exam occurred, the receiving police department (i.e., the police department to which the assault was reported), and the receiving SANE program (i.e., the SANE program that completed the SAK) to control for these variables in later analysis. The independent variables included three broad categories: victim characteristics, assault characteristics, and case characteristics. The independent variables, their final coding schemes, and the rationale for these coding schemes are listed in Table 2.

Analysis

The current data set consisted of sexual assault cases nested with police departments and within time. Each sexual assault case was reported to 1 of the 23 different police departments at a specific point in time over a span of nearly 10 years. It is likely that sexual assault cases reported within the same police department were handled more similarly than those reported across police departments (e.g., as a result of different explicit and implicit practices related to the response to sexual assault, quality of relationship with the SANE program, number of front line officers available to respond to sexual assault, etc.) and that cases reported closer in time were handled more similarly than those reported further apart in time (e.g., as a result of different elected prosecutors, high profile cases with rippling effects throughout the

Table 2. Independent Variables Predicting SAK Submission to the Crime Lab for Analysis.

Variable	Description	Coding
Victim characteristics		
Age	Age of the victim at the time of the exam	Dichotomous: 13-15 years old = 0 16-17 years old = 1
Race	Race of the victim	Dichotomous White = 0 Non-White = 1
Disability status	Whether or not the victim has a disability (physical, mental, learning, or developmental)	Dichotomous: No disability = 0 Disability = 1
Assault characteristics		
Relationship	The relationship between the perpetrator and the victim	Dummy Multiple perpetrators = 0 Single known perpetrator = 1 Single unknown perpetrator = 2
Number of assault acts	Count variable of total number of assault acts (vaginal penetration, oral contact to the victim's genitals, oral contact to the perpetrator's genitals, and anal penetration with each act coded dichotomously)	Count Fondling = 0 1 Assault act = 1 2 Assault acts = 2 3 Assault acts = 3 4 Assault Acts = 4
Weapon use	Whether or not a weapon was used in the assault	Dichotomous No weapon used = 0 Weapon used = 1
Victim alcohol/ drug use	Whether or not the victim consumed drugs/alcohol prior to/ during the assault	Dichotomous No drug/alcohol use = 0 Drug/alcohol use = 1
Case characteristics		
Time exam assault	The time delay between the exam and the assault	Count Same day as assault = 1 1 day after assault = 1 2 days after assault = 2 3 days after Assault = 3 4 days after assault = 4 5 days or more = 5
Injuries	The number of injuries identified in the exam	Count 0 injuries = 0 1 injury = 1 2 injuries = 2 3 injuries = 3 4 injuries = 4 5 injuries = 5 6 injuries = 6 7-10 injuries = 7 11+ injuries = 8

community, the implementation of a coordinated response or advocacy center). Ideally, both of these variables would have been entered into a cross-classified multilevel model as random effects. This was not possible as there were relatively few cases for a number of months in some of the smaller police departments. As an alternative, the intraclass correlation (ICC) was examined for both of these variables. The ICC across police departments was .033, while that across month in time for the assault was .028. Because police departments accounted for slightly more variance between units in the sample (i.e., greater within-unit clustering), the analysis included the influence of police department as the random effect and the influence of time as a fixed effect at Level 1.

HLM 7.0 was used for all analyses using full maximum likelihood for estimation, the appropriate estimation for a nested model comparison (O'Connell & McCoach, 2008). Police department, time, and SANE program (the control variables), in addition to the independent variables, were entered into a multilevel logistic regression model. Predictor variables were examined in a hierarchical fashion across four ordered blocks to control for effects of variables entered into the model in previous blocks and to examine whether each block significantly added to the prediction of the dependent variable. Variables that did not have a significant relationship to the dependent variables were trimmed from the model (Hosmer & Lemeshow, 2000).

Results

Of the 393 adolescent sexual assault cases in the study, 59.3% SAKs were submitted to the crime lab for analysis. This rate of SAK submission was very consistent across both sites in the study (58.9% in Site A and 59.9% in Site B). The results of the multilevel logistic regression used to model what factors predicted SAK submission to the crime lab for analysis by law enforcement personnel are summarized in Table 3.

The intercept in the control variables model of Table 3 (Block 1 of Table 3; odds ratio [OR] = 2.035) indicates that an adolescent assault reporting to SANE Program Site A at the intercept month (centered at month 66) was just more than 2 times as likely to have the SAK submitted to the crime lab for analysis than not. While the effects of time alone and site alone were nonsignificant, there was a significant effect of site by quadratic time (OR = 1.092) indicating a different nonlinear pattern of submission for each site.

Block 1 (control variables model) did not make a significant improvement in predicting SAK submission over a null model (i.e., a model with no predictors; logistic regression chi-square change, $p = .2530$). There was no statistical reason to remove the control variables as their inclusion did not have an

Table 3. Logistic Regression Predicting SAK Submission to the Crime Lab for Analysis.

	Control Variables Model			Victim Characteristics Model			Assault Characteristics Model		
	Log Odds	Odds Ratio	p	Log Odds	Odds Ratio	p	Log Odds	Odds Ratio	p
Intercept	0.711	2.035	0.004	0.894	2.444	0.002	0.042	1.042	0.922
Block 1: Control variable effects									
Site (0 = Program A; 1 = Program B)	-0.403	0.668	0.283	-0.520	0.594	0.213	-0.339	0.713	0.440
Month in which assault occurred	-0.040	0.961	0.485	-0.054	0.948	0.359	-0.056	0.946	0.352
Site x Time (month in which assault occurred)	0.022	1.023	0.803	0.035	1.035	0.705	0.032	1.032	0.735
Quadratic time	-0.058	0.944	0.048	-0.052	0.949	0.083	-0.054	0.948	0.080
Site x Quadratic time	0.088	1.092	0.025	0.085	1.088	0.035	0.082	1.085	0.047
Block 2: Victim characteristics									
Age group (0 = 13-15; 1 = 16-17)				-0.589	0.555	0.007	-0.627	0.534	0.006
Race (0 = White; 1 = Non-White)				0.675	1.963	0.024	0.732	2.079	0.019
Block 3: Assault characteristics									
Relationship to assailant—Unknown							1.028	2.797	0.032
Relationship to Assailant—Known							0.704	2.021	0.037
Relationship to assailant—Gang (reference category)									
Number of types of sexual assault							0.450	1.569	0.002
Variance of random intercepts across police departments	0.088			0.168			0.220		
Model deviance	1243.91			1231.24			1216.67		
Number of Parameters	7			9			12		
Logistic regression chi-square (two-tailed) compared with previous model	0.2530 ^a			0.0017			0.0022		

^aThe control model is compared to the null model.

untoward effect on other terms in the model (e.g., standard errors, the number of iterations required to get to the final model, or other coefficients). Conceptually, there was a reason to retain them because, as control variables, they ensure that any predictors identified later on are a result of that specific predictor and not the SANE program site, time, or their interaction.

Victim characteristics were added in as the second block of the model (Block 2 of Table 3). The significant effect of age group ($OR = .555$) indicates that cases with older victims (16-17 years old) were half as likely to have their SAK submitted to the crime lab for analysis as compared with younger victims (13-15 years old). In addition, the significant effect of race indicates that cases with non-White victims ($OR = 1.963$) were nearly twice as likely to have their SAK submitted to the crime lab for analysis as compared with White victims. Disability status was not significantly related to law enforcement's decision to submit the SAK. The likelihood of SAK submission linked to victim characteristics did not differ based on site. Finally, the addition of the victim characteristic block (i.e., victim's age and race) to the model significantly improved the prediction of the dependent variable ($p = .0017$).

Assault characteristics were added in as the third block of the model (Block 3 of Table 3). Adolescent sexual assault cases with a single perpetrator, regardless of whether they were known ($OR = 2.021$) or unknown to the victim ($OR = 2.797$), were significantly more likely to have their SAK submitted to the crime lab for analysis than cases with more than one perpetrator. In addition to the victim-perpetrator relationship, the number of assault acts committed by the perpetrator (centered at 1) significantly predicted SAK submission ($OR = 1.569$). Assault acts included vaginal penetration, anal penetration, oral contact performed on the victim and, oral contact performed on the perpetrator. In the model, each additional assault act (e.g., a case with vaginal penetration as compared with a case with vaginal and anal penetration) resulted in law enforcement being one and a half times more likely to submit the SAK to the crime lab for analysis. No other assault characteristics were significantly related to SAK submission, including the use of a weapon by the perpetrator or the use of drugs or alcohol by the victim. Similar to the victim characteristics, the likelihood of SAK submission linked to assault characteristics did not differ based on site. The addition of the assault characteristics model (i.e., the relationship between the victim and the perpetrator and the number of assault acts) significantly improved the prediction of the dependent variable ($p = .0022$).

Finally, case characteristics (time lapse between assault and exam; number if injuries detected during exam) were not significantly related to SAK submission. As with the victim and assault characteristics, the likelihood of

SAK submission for each of these variables did not differ and did not reach significance based on the site. Furthermore, while the case characteristics were not included in the final model due to nonsignificance, had they been retained, they would not have significantly added to the prediction of the dependent variable ($p = .2718$).

Discussion

The problem of unsubmitted SAKs has garnered national attention, and, despite the fact that adolescents are at particularly high risk for sexual assault, no prior research has examined rates of SAK submission in crimes against adolescent victims. In the current study, just more than 40% of all adolescent sexual assault cases did not have their SAK submitted to the crime lab for analysis. This rate is consistent with the rate of SAK submission found by Patterson and Campbell (2012) among adult sexual assault cases. However, it is not known whether this rate of SAK submission is typical of other communities across the country as these data are not routinely recorded or available. Regardless, the number of SAKs that are never analyzed due to law enforcement's decision not to submit them to the crime lab, resulting in "justice denied" for the victim (see Strom & Hickman, 2010), is alarming. This study identified some of the factors influencing that decision for adolescent sexual assault cases.

Younger victims, ages 13 to 15 years old (60.6% of cases), were more likely to have their SAK submitted to the crime lab for analysis than older victims, ages 16 to 17 years old (39.4% of cases). Previous research has found that detectives may doubt the stories of teenagers and young women, assuming that the assault was fabricated to hide consensual activity from a parent or spouse, whereas younger and older victims are perceived as more "legitimate" (Rose & Randall, 1982). Detectives may perceive younger teens as more credible because it may be assumed that they are not yet engaging in consensual sex and thus would be less likely to fabricate the assault, while older adolescents may be assumed to be creating a story of rape when authority figures find out about it.

Non-White victims (18.8% of cases) were found to be more likely to have their SAK submitted to the crime lab for analysis than White victims (81.2% of cases). This finding is inconsistent with previous research that has found race to be nonsignificant (Campbell et al., 2009; Kerstetter, 1990), or an effect of race in the opposite direction—White victims were more likely to have their case prosecuted (Frohmann, 1997; LaFree, 1981; Rose & Randall, 1982).² Because the effect of race was in opposition to the current literature, these cases were further examined to determine whether the race finding

was a function of other characteristics of the victim, assault, or overall case. Two characteristics appeared to differ in relation to the race of the victim—weapon use and the number of perpetrators. Differential rates of weapon use and gang rape, however, could not explain the finding. It is possible that there are other variables not collected in the study that can explain the race effect finding. One such variable is the racial identity of the perpetrator. Between 80% and 90% of violent crimes against women, including sexual assault, are committed by someone of the same racial background as the victim (U.S. Department of Justice, 1994), suggesting that the race of the perpetrator matched the race of the victim. It is therefore possible that law enforcement's decision-making process was not so much influenced by the racial identity of the victim as it was influenced by the racial identity of the perpetrator. It could be that cases with non-White perpetrators were actually more likely to have their SAK submitted to the crime lab for analysis. This potential explanation is supported by previous research that found that decisions made by law enforcement in relation to sexual assault cases were more influenced by the race of the perpetrator than that of the victim (LaFree, 1981) and the disproportionate representation of non-Whites in the criminal justice system, possibly resulting from bias in the system (Mauer, 1999). This explanation, however, could not be tested as the data source for this study was SANE program records; these records collect information about the victim, not the perpetrator.

Adolescent sexual assaults with more than one perpetrator (i.e., gang rape; 12% of cases) were less likely to be submitted to the crime lab for analysis than assaults with a single known (78% of cases) or unknown (10% of cases) perpetrator. Law enforcement may have been more likely to submit the SAKs for adolescent sexual assault cases with a single perpetrator as opposed to cases with multiple perpetrators as a result of the perceived credibility of the victim. Adult victims of gang rape are met with more negative social reactions when disclosing their assault as compared with assaults with a single perpetrator (Ullman, 2007), and this may be due in part to disbelief on the part of law enforcement personnel. They may be suspicious as to why the victim would be in a situation that led to the assault (e.g., a female adolescent alone with multiple males), or they may think that the story has been fabricated after engaging in consensual sexual activity, decreasing the credibility of the victim and therefore rendering law enforcement less likely to submit the SAK. Previous research has found that such assaults are sometimes referred to by detectives as "party rapes" and taken less seriously (LaFree, 1981). In addition, it is possible that law enforcement personnel decide not to submit SAKs from gang rapes due to the push back they receive from the crime lab. The presence of biological specimen from multiple

individuals in a single SAK requires specialized techniques (i.e., Y-marker analysis) to “resolve the complex mixture” (Harris, 2001). Crime lab personnel may overtly or covertly send the message to law enforcement that these SAKs are difficult to process and that they should not be as readily submitted. Again, this explanation cannot be tested with the available data set and is speculative.

Cases with a higher number of assault acts (i.e., vaginal penetration, oral contact to the victim’s genitals, oral contact to the perpetrator’s genitals, and anal penetration) were more likely to have their SAK submitted to the crime lab for analysis than cases with fewer assault acts. The majority of adolescent sexual assault cases in the study involved a single sexual assault act (61%), followed by two sexual assault acts (24%), three sexual acts (9%), fondling alone (4%), and four sexual assault acts (2%). Law enforcement personnel are more likely to question a suspect, and the case is more likely to be prosecuted if the assault involved full penetration (Campbell et al., 2009; Frazier & Haney, 1996), suggesting that they are more likely to submit SAKs for cases they perceive to be more severe. These cases may also be consistent with their perception of “real” rape (Estrich, 1987).

Weapon use and drug or alcohol use by the victim did not significantly affect the likelihood of law enforcement deciding to submit the SAK to the crime lab for analysis. The null finding of weapon use was likely due to limited variance as only 13 cases, 3.3%, involved the use of a weapon. The use of drugs or alcohol by the victim, however, was far more common with 151 cases (38.4%) reporting victim consumption of drugs or alcohol. The nonsignificant effect of alcohol or drug use by the victim on the likelihood of SAK submission to the crime lab for analysis supports what was found by Patterson and Campbell (2012) among adult populations but is not consistent with earlier research on other decisions made by law enforcement. Multiple studies found that alcohol or drug use and other “questionable behavior” resulted in a decreased likelihood for law enforcement to classify the assault as rape, for law enforcement to arrest a suspect, for the suspect to be charged, and for the case to progress further through the criminal justice system (Campbell et al., 2009; Kerstetter, 1990; LaFree, 1981; Rose & Randall, 1982; Schuller & Stewart, 2000). It is possible that use of alcohol or drugs by the victim may influence many decisions by law enforcement but not their decision to submit the SAK.

Although this study advances the current knowledge base on SAK submission, particularly in adolescent cases, it does have important limitations that temper the strength of the conclusions that can be drawn from this work. The current study includes data collected through 2007 and does not include more recent information. This study was conducted in two Midwestern

communities with well-established SANE programs and good relationships with law enforcement personnel. These results may not generalize to communities without such SANE programs or collaboration among service providers. In addition, the victim, assault, and case characteristic data used in the study were obtained from the SANE program files. These files are remarkably comprehensive but nevertheless lacked desired detail on a number of predictors (e.g., severity of disabilities, perpetrator data, etc.), preventing further examination of specific variables.

The current study suggests that a substantial proportion of adolescent SAKs are not submitted to the crime lab for analysis, highlighting several implications for practice. First, it is important to understand that the SAK is only one piece of the larger case. Legal cases need to be developed in their entirety with the SAK playing a supporting role, rather than the lead. An unsubmitted kit should not be understood as *the* problem but rather as *an artifact of the problem*. Sexual assault cases go largely unprosecuted and, if they do enter the prosecutorial process, are likely to drop out of the system before resulting in a conviction (see Lonsway & Archambault, 2012, for a review of attrition in the criminal justice system). While community-wide protocols or policies detailing the SAK submission process may decrease the number of SAKs that are unsubmitted, these same protocols and policies may not attend to the larger problem of how sexual assault cases are treated in our current criminal justice system.

In addition to considering the role of the SAK in the larger legal case, it is important to consider the role of law enforcement in the larger system response to sexual assault. While law enforcement is responsible for the physical transport (and maintaining chain of custody) of the SAK from the medical facility to the crime lab, the prosecutor, crime lab itself, and other community responders may have great influence on the rate of SAK submission and which specific SAKs are submitted. Cowan and Koppl (2010) argue that the tight relationship between law enforcement agencies, prosecution, and crime labs allows them to act as a single monopoly supplier of criminal justice. This entity, fueled by an incentive to win legal cases perhaps regardless of the perceived guilt of the suspect, decides which cases to pursue and works as a unit to build evidence (Cowan & Koppl, 2010). For example, the victim–perpetrator relationship finding in the current study that cases with single perpetrators are more likely to result in SAK submission than those with multiple perpetrators may be due to this relationship. These cases may not be perceived as winnable by the prosecutor, the crime lab may express how difficult it is to process them, and/or law enforcement may not perceive the investigation as worthwhile. The problem of unsubmitted SAKs and the solution need to be examined within this complicated system. A system-wide

commitment to increase SAK testing across communities as one component of developing the overall legal case indicates a commitment to justice for victims of sexual assault.

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Notes

1. Sexual assault nurse examiner (SANE) programs first emerged in the 1970s as an alternative to the traditional emergency department response (Ledray & Arndt, 1994). They were created to provide comprehensive first-response medical care, crisis intervention, and forensic evidence collection post-assault via specially trained nurses who focus on the bio-psychosocial needs of all patients (Ledray & Arndt, 1994; Littel, 2001; Lynch, 2006).
2. It is possible that non-White victims are more likely to have their sexual assault forensic exam kit (SAK) submitted to the crime lab for analysis, while White victims are more likely to have their case prosecuted, as these are two separate processes. An examination of final case outcomes was beyond the scope of this study as SAK submission among adolescent sexual assault cases was the phenomenon of interest.

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