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EXAMINING THE RELATIONSHIP BETWEEN VICTIM SELF-PROTECTIVE BEHAVIORS AND SEXUAL ASSAULT CASE PROCESSING

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Abstract

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Sexual assault, a severely underreported crime in the US, is hindered by negative interactions between victims and criminal justice system actors', contributing to high case attrition rates. Accordingly, understanding factors impacting case outcomes, such as criminal justice system actors' perceptions of the victim and decision-making, is crucial. Victim self-protective behaviors—which are the range of actions, reactions, or strategies employed by individuals to mitigate or prevent harm from a crime, such as sexual assault—lack sufficient research on their impact on case processing. To fill this gap, this study analyzed 469 reported sexual assault cases, employing bivariate and multivariate analyses to assess predictive factors. Findings offer insights into sexual assault case processing, guiding future research and policy recommendations to enhance decision-making, and reducing case attrition in sexual assault cases.

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Chapter 1 INTRODUCTION

Sexual assault is a term broadly referring to any "sexual contact or behavior that occurs without explicit consent of the victim" and includes rape (attempted/completed), forced sexual acts, fondling or unwanted sexual touching, and so on (RAINN, n.d.). Sexual assault victimization is not only deeply traumatic but has also been linked to extensive long-term consequences for the victim-survivors, their loved ones, their communities, and society as a whole (Bigras et al., 2021; Campbell et al., 2009a; Dworkin & Schumacher, 2018; Khadr et al., 2018; Molstad et al., 2023; Vitek & Yeater, 2021). These collateral consequences impact all aspects of the victims' physical, psychological, economic, and social well-being (Basile et al., 2022; Campbell et al., 2009a; Mason & Lodrick, 2013; Molstad et al., 2023; Ullman & Peter-Hagene, 2014).

Moreover, decades of research underscore the pervasiveness of sexual assault victimization in the (U.S.) (Fisher et al., 2003; Koss et al., 1987; Krebs et al., 2016; Tjaden & Thoennes, 2006). For instance, the Center for Disease Control (CDC) developed an ongoing survey to collect the "most current and comprehensive national- and state-level data on intimate partner violence, sexual violence and stalking victimization in the United States" (NISVS, 2021). In 2022, the NISVS reported that the lifetime prevalence for completed or attempted rape[1] victimization was 1 in 4 for women and 1 in 26 for men (Basile et al., 2022). Further exacerbating this concern is the fact that specific vulnerable and marginalized populations, such as college students, racial and

[1] Rape was defined as "any completed or attempted unwanted vaginal (for women), oral, or anal penetration through the use of physical force (such as being pinned or held down, or by the use of violence) or threats to physically harm and includes when the victim was too drunk, high, drugged, or passed out and unable to consent… Among men, rape includes oral or anal penetration by a male using his penis. It also includes anal penetration by a male or female using their fingers or an object…" (Basile et al., 2022).

ethnic minorities, sexual and gender minorities, individuals with disabilities, and those engaged in sex work, are at higher risk for sexual assault victimization (Blondeel et al., 2017; Herman, 2003; Katz-Wise & Hyde, 2012; Richards & Hayes, 2023).

Despite the pervasiveness and seriousness of sexual assault, criminal justice system (CJS) case processing is still characterized as problematic for several reasons (Spohn & Tellis, 2019). First, sexual assault is significantly underreported compared to other violent crimes (Thompson & Tapp, 2023; Tjaden & Thoennes, 2006). Recently, the National Crime Victimization Survey (NCVS) found that only about 21.4% of rape and sexual assault[2] victimizations were reported to law enforcement, compared to 42% of other violent victimizations reported to law enforcement overall (Thompson & Tapp, 2023). In particular, research partially attributes underreported historic mistreatment of victims of sexual assault by the CJS (Pattavina et al., 2016, 2021; Patterson, 2011). Second, when cases are reported, victims describe having negative experiences with the criminal justice system (e.g., victim-blaming, secondary victimization; Campbell et al., 2001, 1999; Campbell & Raja, 2005).

Third, in consequence, reported sexual assaults rarely advance from law enforcement to prosecution—a process known as case attrition (Alderden & Ullman, 2012a; Pattavina et al., 2021; Spohn & Tellis, 2014). Indeed, many scholars have characterized sexual assault as a crime with high rates of case attrition (Lovell et al., 2021; Pattavina et al., 2021; Spohn & Tellis, 2014). Lastly, scholars have argued for decades that the "locus of case attrition lies with the gatekeepers of the criminal justice system: police and prosecutors" as key decision-makers in the criminal justice system

[2] The NCVS combines rape and sexual assault as a single victimization measure; see the NCVS Dashboard for specific operationalizations: https://ncvs.bjs.ojp.gov/terms.

(Spohn & Tellis, 2014, p. 3; see also Fansher & Welsh, 2023; Jordan, 2004; Kerstetter, 1990).

In response to this problem, nearly three decades of research has proliferated on the legal and extralegal factors[3] associated with case attrition in sexual assault (see for meta-analyses, Lapsey et al., 2022, 2023). Though Chapter 2 officers a comprehensive review of these factors, numerous studies have demonstrated that perceptions of victim credibility, specifically,—often associated with behaviors such as alcohol consumption, drug use, and engagement in sex work—strongly influences sexual assault case attrition (Alderden et al., 2021a; Alderden & Ullman, 2012b; Beichner & Spohn, 2005, 2012; Kerstetter, 1990; Kerstetter & Van Winkle, 1990; Lapsey et al., 2022, 2023; Morabito et al., 2016; O'Neal et al., 2015, 2019; O'Neal & Hayes, 2020; O'Neal & Spohn, 2017; Spohn et al., 2001; Spohn & Holleran, 2001; Spohn & Tellis, 2014). In particular, it is evident that sexual assault case processing especially scrutinizes victim behaviors (Spohn & Tellis, 2014).

While significant strides have been made in understanding sexual assault case processing issues, a critical gap remains in our understanding of how **victim self-protective behaviors** (VSPBs) shape these case processing outcomes. In brief, VSPBs encompass a range of actions, reactions, or strategies employed by individuals to mitigate or prevent harm from a crime, such as sexual assault (Kleck & Tark, 2014; Guerette & Santana, 2010). In particular, examining the impact of VSPBs on criminal justice actors' decision-making is crucial for formulating recommendations to reduce negative victim

[3] Legal factors pertain to elements of a case that raise legal issues, such as the strength of evidence for or against a defendant (Spohn & Holleran, 2001); while extralegal factors, such as demographic characteristics of the victim or perpetrator, may influence decision-making despite their irrelevance to meeting statutory requirements of a crime (Spohn & Holleran, 2001).

experiences with the CJS, improve case processing outcomes such as reducing case attrition. Therefore, in this dissertation, I aimed to contribute an overarching understanding of sexual assault case processing through an investigation of the role of VSPBs on four outcomes related to criminal justice actors' decision-making and perceptions: perceptions of victim credibility, law enforcement case referment, prosecutorial charging, and case conviction.

In this endeavor, I employed a sample of 469 sexual assault cases reported to law enforcement from a single jurisdiction in Minnesota. In doing so, findings inform practical recommendations for improving sexual assault case processing. Additionally, the current study overcomes gaps in the separate literature base on victim self-protective behaviors in sexual assault victimization. Before describing these additional contributions, the next section provides an overview and history on the research regarding victim self-protective behaviors.

History of Research on Victim Self-Protective Behaviors

As previously discussed, the current study defines victim self-protective behaviors as the range of actions, reactions, or strategies employed by individuals to mitigate or prevent harm from a crime, such as sexual assault (Kleck & Tark, 2004; Guerette & Santana, 2010). Though the study of these behaviors in the context of sexual assault have been studied since the 1940s (Mendelsohn, 1956; Miethe, 1985; Von Hentig, 1948), the term—victim self-protective behaviors—is relatively recent development in criminology (Clay-Warner, 2002; Fisher et al., 2007; Gilmore et al., 2018; Guerette & Santana, 2010; Kleck & Tark, 2004; Leclerc et al., 2011; Powers, 2014, 2015; Powers & Simpson, 2012; Santana, 2005; Tark & Kleck, 2014). Historically, VSPBs have been referred to as "rape

avoidance" (Bart & O'Brien, 1984; Levine-MacCombie & Koss, 1986; Ullman, 1997, 2007), "self-defense" (Hollander et al., 2024), and, notably enduring to the present day, 'victim resistance' (Dardis et al., 2018; Chopin & Beauregard, 2023; Reid & Beauregard, 2017; Rozee & Koss, 2001; Ullman, 2014). This section provides a history of this body of knowledge, starting from the earliest studies on victim 'resistance.'

Around the 1940s, early studies on victim 'resistance' emerged alongside the development of "victim-precipitation" approaches (Amir, 1968; Mendelsohn, 1956; Von Hentig, 1948; Wolfgang, 1957, 1958) which caused significant controversy for classifying victims as "guiltless" to "more guilty than the offender" or for using phrases such as the "contributory victim" (Miethe, 1985, p. 209). Simply put, these approaches were criticized for adopting a victim-blaming lens by suggesting that victims were accountable for their victimization (e.g., Wolfgang, 1957, 1958). In consequence, this form of 'resistance' research declined around the mid-1970s (Meithe, 1985).

By the 1980s-90s, there was a revitalization of victim 'resistance' research, particularly with the inauguration of the National Crime Victimization Survey (NCVS) which has been a primary source of information on the prevalence of victimization in the U.S. since 1973 (NCVS, n.d.). These early studies using the NCVS, coupled with studies using court testimonies and police records, found that anywhere between 45%-87% of victims of sexual assault used some form of 'resistance' (e.g., fighting back, screaming for help) (Atkeson et al., 1989; Cohen, 1984; Medea & Thompson, 1974), which has been supported in more recent studies (Clay-Warner, 2002; Fisher et al., 2007; Tark & Kleck, 2004, 2014; Ullman & Knight, 1991). During this time, scholars were particularly interested in the influence of victim 'resistance' on two outcomes: (1) rape completion

(i.e., versus attempted rape) and (2) victim injury (see for meta-analyses, Wong & Balemba, 2016, 2018).

Regarding rape completion, scholars sought to understand whether engaging in various 'resistance' strategies were effective at preventing the completion of a rape (i.e., completed penetration) (see e.g., Atkeson et al., 1989; Bart & O'Brien, 1984; Cermele & McCaughey, 2022; Clay-Warner, 2002; Cohen, 1984; Fisher et al., 2007; Guerette & Santana, 2010; Kleck & Sayles, 1990; Marchbanks et al., 1990; Tark & Kleck, 2014; Ullman, 1997, 1998, 2007; Ullman & Knight, 1991, 1992, 1995; Zoucha-Jensen & Coyne, 1993). This line of inquiry stemmed from the notion that completed rapes were associated with more severe consequences—such as worse psychological outcomes and higher risk of sexually transmitted diseases or pregnancy—compared to attempted rapes (i.e., prevented penetration) (Bart & O'Brien, 1984; Kilpatrick et al., 1989; Ullman & Filipas, 2001).

In general, this body of research has found that any 'resistance' strategies, whether physical (e.g., hitting) or verbal (e.g., crying), decreases the likelihood of rape completion (Browne & Beyeler, 1985; Clay-Warner, 2002; Tark & Kleck, 2014), with a recent meta-analysis finding a six times greater likelihood of 'rape avoidance' (Wong & Balemba, 2018). Expanding upon this scholarship, subsequent researchers, generally find that forceful (e.g., hitting, screaming) and/or physical (e.g., hitting, running away) VSPBs are more likely to prevent a rape completion, compared to nonforceful (e.g., pleading, running away) and/or verbal (e.g., pleading, screaming) strategies (Atkeson et al., 1989; Bart & O'Brien, 1984; Becker et al. 1982; Block & Skogan, 1986; Kleck & Sayles, 1990;

Koss et al., 1988; Lizotte, 1986; Marchbanks et al., 1990; Ruback & Ivie, 1988; Ullman, 1997, 1998; Zoucha-Jensen and Coyne, 1993).

Second, regarding victim injury, despite the evidence suggesting that 'resistance' was associated with rape prevention, scholars were still concerned with whether engaging in 'resistance' also increased the risk of victim injury (Atkeson et al., 1989; Browne & Beyeler, 1985; Kleck & Tark, 2004; Marchbanks et al., 1990). Early studies found that physical fighting against the perpetrator was associated with greater physical injury to the victim (see for review, Ullman, 2007). However, Tark and Kleck (2004) found that if the victim engaged in SPBs after the sexual assault began, then new injuries were infrequent (see also Bachman et al., 2002; Quinsey & Upfold, 1985; Thompson et al., 1999; Ullman & Knight, 1992). However, a recent meta-analysis on this found that any 'resistance' was associated with greater injury risk, especially when physical behaviors were used (e.g., hitting, kicking, biting; Wong & Balemba, 2016). Though, the authors did not note whether studies accounted for the temporal ordering issue revealed by Tark and Kleck (2004). Consequently, there is ongoing debate whether self-defense training is a reliable sexual assault prevention strategy even while it decreases the risk of rape completion (Cermele & McCaughey, 2022; Hollander et al., 2024; Kettrey et al., 2024).

Moreover, alongside these primary literatures, a smaller area of research examines how victim self-protective behaviors influence lay persons' perceptions of the victim and perpetrator (Angelone et al., 2015; Hollander & Rodgers, 2014; Krulewitz & Nash, 1979; McCaul et al., 1990; Rawn et al., 2023; Rogers et al., 2009; Scroggs, 1976). This line of inquiry stemmed from the prevalent *rape myth*[4] suggesting that individuals would

[4] *Rape myths* reinforce stereotypical depictions of sexual assault that do not reflect the overwhelming majority of victimization experiences—which often leads to victim-blaming (Planty et al., 2013).

universally resist a sexual assault, which contributed to victim-blaming attitudes, in which victims are held accountable for not 'resisting enough' (i.e., victim blameworthiness; Dardis et al., 2018; Hollander & Rodgers, 2014; Gravelin et al., 2019). For example, Angelone and colleagues (2015) provided experimental vignettes to 297 male undergraduate students comparing attributions of culpability on the victim and perpetrator based on three conditions: no resistance, verbal resistance only, or physical resistance only.[5] Findings showed that, relative to no resistance, verbal and physical 'resistance' was associated with lower levels of perceived victim culpability and higher levels of perpetrator culpability. In another example including female undergraduate students, Rawn and colleagues (2023) provided experimental vignettes to 355 undergraduate students comparing attributions of blame on the victim and suspect based on three 'resistance' conditions: verbal, verbal with interruption, or physical.[6] Findings demonstrated that students assigned less blame to the victim when 'physical resistance' was present. Despite its scarcity, this research has important implications regarding how VSPBs can influence perceptions of the victim and lead to victim-blaming attitudes among lay person samples (Krulewitz & Nash, 1979; McCaul et al., 1990; Rogers et al., 2009; Scroggs, 1976).

Limitations of Existing Research

[5] Authors provide the following descriptions for each experimental condition: "no resistance, verbal resistance only ("she told him to stop and that she didn't wanted to go any further . . . [he] allegedly continued in spite of her verbal protests"), or physical resistance only ("she pushed him away and attempted to get up . . . [he] allegedly continued in spite of her physical protests")" (p. 2287-2286).
[6] Rawn et al. (2023) provides limited descriptions for conditions: "…the rape … noted either verbal resistance, physical resistance, or that the victim verbally resisted, and it was interrupted by a knock on the door" (p. 6-7).

As previously stated, the current dissertation aimed to overcome limitations in the existing research on victim self-protective behaviors. There are two limitations this study strove to address which can be categorized as (1) conceptual and (2) methodological.

Conceptual Limitations. Regarding conceptual limitations, the current substantive body of research on VSPBs has mostly focused on two outcomes: rape completion and victim injury (Wong & Balemba, 2016, 2018). Given the historical context when this research proliferated, the findings provided novel and important contributions to early sexual assault prevention research. Further, the implications of this research were straightforward: if victims engaging in VSPBs prevented rape completion without risking further injury, then sexual assault prevention strategies (e.g., self-defense classes) could provide targeted education to potential victims, explaining the benefits of 'resistance' far outweigh the potential costs of them (Cermele & McCaughey, 2022). In a way, this thought process is reminiscent of how rational choice theory was originally articulated for the decision to offend (Clarke & Cornish, 1985; Cornish & Clarke, 1986, 2008). According to a rational choice perspective, criminal behavior is the purposive outcome of a decision calculus weighing the costs and benefits of committing a crime (Cornish & Clarke, 2008; Leclerc & Cale, 2015). In a simliar way, the implications of the current self-protection literature suggest that victims' decisions to engage in VSPBs can be understood through this framework. This notion would be consistent with advocates for self-defense training as a viable sexual assault prevention method in light of this research (Cermele & McCaughey, 2022; Ullman, 2022a, 2022b).

However, there has been an emerging literature on the *neurobiology of sexual assault* which may undermine previous research (Campbell, 2015; Dixon, 2024).

According to trauma research, the fear, terror, and harm associated with a sexual assault activates neurobiological processes that act as the brain's defense mechanism (Campbell, 2015; Cuevas et al., 2018; Dixon, 2024; Mathews & Blyer, 2023; Rowland et al., 2024). Campbell (2012, 2015), in a seminal presentation to the National Institute of Justice, described how some victims will exhibit neurobiological activations consistent with a *fight* (e.g., fighting back) or *flight* (e.g., running away) response, while others may experience a *freeze* response, a phenomenon known as *tonic immobility*. Research on this phenomenon has described tonic immobility as, "an involuntary, temporary state of motor inhibition in response to situations involving intense fear…a catatonic-like state with…relative unresponsiveness to external stimuli" (Möller et al., 2017, p. 932). Notably, preliminary evidence suggests tonic immobility in as many as 37%-52% of sexual assault victims (Galliano et al., 1993, Fuse et al., 2007; Heidt et al., 2005).

Though these specific mechanisms are still an emerging area of research, trauma research generally agrees on this: victims have *little choice* with regards to how their bodies will respond to a traumatic event like a sexual assault (Campbell, 2012, 2015; Cuevas et al., 2018; Dixon, 2024; Mathews & Blyer, 2023; Möller et al., 2017). Given this, the victim's decision to engage in SPBs are not based on a rational calculation; rather, some victims, influenced by their neurobiology, may instinctively self-protect (e.g., fight, flight, friend), while others may experience complete freezing (i.e., tonic immobility) (Campbell, 2012, 2015). Therefore, the predominate direction the VSPB literature has taken thus far may have limited utility for sexual assault prevention or, at worse, may introduce bias against victims who did not engage in SPBs (Angelone et al., 2015; Campbell, 2015; Rawn et al., 2023; Rogers et al., 2009).

Given contemporary evolutions in this research landscape, there is a demand for a contemporary extension of the VSPB literature. If one must assume the decision to engage in self-protection is not the product of a rational decision and more of a product of neurobiological processes, then an alternative research question would be how do VSPBs impact other's perceptions of the victim? Specifically, how are the perceptions of those with important decision-making power (e.g., criminal justice actors) influenced by victim self-protective behaviors? As previously discussed, studies show that lay persons' perceptions of victims are impacted by engagement in VSPBs, however, virtually all these studies use hypothetical vignettes with undergraduate student samples (Angelone et al., 2015; Broussard & Wagner, 1988; Krulewitz & Nash, 1979; Rawn et al., 2023) or small non-representative adult samples (Rogers et al., 2009; Scroggs, 1976). These studies do not examine how real cases are decided on by CJS actors who could be influenced for/against sexual assault victims based on utilized VSPBs. This gap in research is one the current dissertation sought to fill through an examination of sexual assault cases.

Methodological Limitations. Regarding methodological limitations, the current dissertation aimed to tackle several methodological limitations in the current literature on victim self-protective behaviors (VSPBs). One such limitation is the lack of consensus on how to operationalize VSPBs. As demonstrated earlier, this phenomenon has had many names (e.g., rape avoidance, resistance), reflecting the diverse approaches scholars have used in this work, which is further evidenced in varied measurement approaches.

Early studies typically used a dichotomous measure, which remains relevant in contemporary research, comparing either forceful/nonforceful or physical/verbal

'resistance'; though, more recently, many use a four-category, disaggregated measure (e.g., Angelone et al., 2015; Dardis et al., 2018; Gidycz & Dardis, 2014; Guerette & Santana, 2010; Wong & Balemba, 2016, 2018). Dardis and colleagues (2018) provide a useful figure demonstrating the spectrum of self-protection strategies (see Figure 1.1). As illustrated in Figure 1.1, studies have dichotomously compared physical and verbal behaviors (e.g., Angelone et al., 2015; Clay-Warner, 2002; Rawn et al., 2023; Scroggs, 1976), distinguished between forceful and nonforceful behaviors (Ullman, 1997), or employed a four-category approach—i.e., physical forceful, physical nonforceful, verbal forceful, and verbal nonforceful—for greater detail.

Figure 1.1. Spectrum of Self-Protective Behaviors (Dardis et al., 2018)

Table 6.1 Categories and examples of resistance strategies

	Forceful	Nonforceful
Physical	Kicking Punching Scratching Wrestling Shoving Biting Martial Arts Using a weapon	Pulling away from offender Fleeing or running away Avoiding offender Removing offender's hands Struggling Shielding oneself
Verbal	Screaming for help Yelling at offender Threatening offender	Crying Begging Pleading with offender Trying to reason with offender

Further, to date, Keck and Tark (2004) have used the most comprehensive measure for VSPBs which accounts for 16 distinct types of behaviors, dichotomously measured, and were derived from the NCVS (see Table 1.1). However, continued use of this comprehensive measure has been limited (Tark & Kleck, 2004, 2014). Further, these studies and the NCVS do not provide any additional details regarding how qualitative interview data is categorized into these behaviors and any nuances in the data (Keck &

Tark, 2004; Tark & Kleck, 2014). The current dissertation contributes to the prior literature by employing this comprehensive measurement in this study which has measurement implications for VSPB research going forward.

Table 1.1. Kleck and Tark's 16 Self-Protective Behaviors

Type	Definition
1. GUNATACK	V attacked O with gun; fired gun
2. GUNTHRET	V threatened O with gun
3. NOGUNATK	V attacked O with other weapons (knife, etc.)
4. NOGUNTHR	V threatened O with other weapon (knife, etc.)
5. NOWEPATK	V attacked O without weapon (hit, kicked, etc.)
6. NOWEPTHR	V threatened without weapon
7. STRUGGLE	V struggled, ducked, blocked blows, held onto property
8. CHASHELD	V chased, tried to catch or hold O
9. SCAREOFF	V yelled at O, turned on lights, threatened to call police
10. COPRSTALL	V cooperated, or pretended to (stalled, did what they asked)
11. ARGUE	V argued, reasoned, pleaded, bargained, etc.
12. RANHIDE	V ran or drove away, or tried; hid, locked door
13. CALLPOL	V called police or guard
14. GETHELP	V tried to attract attention or help, warn others (cried out for help, called children inside)
15. SCREAM	V screamed from pain or fear
16. OTHER	V did other response

Another methodological limitation evident in the current VSPB literature pertains to the absence of independent data. This issue became evident in recent meta-analyses by Wong and Balemba (2016, 2018) which revealed that most research on VSPBs as it relates to rape completion and victim injury, use overlapping years of NCVS data. Wong and Balemba (2016), for instance, only meta-analyzed six studies on VSPBs and victim injury because ten studies were excluded due to using the same NCVS data spanning from 1973-2002 (Griffin & Griffin, 1981; Block & Skogan, 1986; McDermott, 1979; Kleck & Sayles, 1990; Martin & Bachman, 1998; Brecklin & Ullman, 2001; Tark & Kleck, 2014). In their second meta-analysis on VSPBs and rape completion, only seven studies were included after 14 studies were excluded for using the same NCVS data from

1972 and 2004 (see Lizotte, 1986; Griffin & Griffin, 1981; Block & Skogan, 1986; McDermott, 1979; Kleck & Sayles, 1990; Martin & Bachman, 1998; Brecklin & Ullman, 2001; Clay-Warner, 2002; Santana, 2005; Tark & Kleck, 2014; Guerette & Santana, 2010). The authors justify these exclusion decisions stating:

> "Including effect sizes from multiple studies reporting on the same sample of victims would result in double counting (or triple or quadruple counting, in some cases) the effects from this sample and lead to a biased estimate of the pooled effect… during the literature search process it became apparent that many of the published studies on victim resistance and rape outcomes employ variations of the NCVS data set….In selecting from among the NCVS/NCS studies, we chose a combination of two studies (Kleck and Tark, 2004; Marchbanks et al., 1990) that provided the most years from this data set so as to prevent data loss to the extent possible" (Wong & Balemba, 2018, p. 5).

In both meta-analyses, Marchbanks (1990) and Kleck & Tark (2004) examined the longest time span using the NCVS data (1973–1982 and 1992–2002, respectively); thus, excluding other studies using data from the same timeframes. Accordingly, it is difficult to weigh the magnitude of empirical support in the current VSPB literature, necessitating additional research using diverse, independent samples to better assess replicability of current findings.

Current Study Significance and Aims

This chapter has provided a brief overview of the limitations in the current research on sexual assault case processing and victim self-protective behaviors. Accordingly, I argue there is a *critical gap* in our understanding of the role VSPBs have in the context of sexual assault case advancement. To address this, the current dissertation intersects two areas of sexual assault research in a novel way through three contributions. First, drawing from Kleck and Tark (2004), this study contributes to the handful of studies that use a comprehensive measure for victim self-protective behaviors (see also

Tark & Kleck, 2004, 2014). By applying this measure to a sample of reported sexual assault case files, nuances in VSPBs are drawn.

Second, this study contributes a novel contextualizing of VSPBs in sexual assault case processing by exploring criminal justice actors' decision-making and perceptions. Though prior research has indicated that VSPBs impact the perceptions of laypersons'(Angelone et al., 2015; Hollander & Rodgers, 2014; Rawn et al., 2023; Rogers et al., 2009; Scroggs, 1976), there is a paucity of this research for sexual assault (e.g., Wentz, 2020; intimate partner sexual assault, O'Neal et al., 2015; O'Neal & Spohn, 2017). Third, the current study includes theoretically relevant control variables informed from the broader empirical literature on sexual assault case processing (e.g., victim-perpetrator relationship) (see for review Lapsey et al., 2022, 2023). In summation, the primary aim of the current dissertation was to contextualize victim self-protective behaviors in sexual assault case processing through an investigation of key criminal justice actors' decision-making and perceptions (e.g., law enforcement, prosecutors). In doing so, implications include enhanced effectiveness of sexual assault case processing.

Chapter 2 provides an in-depth review of the relevant extant literature. This includes a summary of the predominate correlates of sexual assault case processing outcomes, including criminal justice system actors' perceptions of the victim and decision-making. This chapter discusses the theoretical frameworks underpinning the current study. Finally, the chapter concludes with four research questions.

Then, Chapter 3 describes the methods employed in the current study. This investigation uses data from the Minnesota Sexual Assault Kit Initiative Research Project (i.e., hereafter referred to as MN SAKI; NIJ 2019-MU-MU-0095). The sample includes

469 sexual assault cases reported to the police and involve a female victim and male perpetrator. To investigate sexual assault case processing, four dependent outcomes are investigated related to criminal justice actors' (1) perceptions of the victim's credibility and decision-making regarding (2) law enforcement case referrals and (3) prosecutorial charging. This study also investigates correlates of (4) case conviction. Further, this chapter describes the process to achieving independent explanatory measures for VSPBs. Next, Chapter 4 provides the results of the analyses from bivariate and multivariate logistic regression analyses. These analyses were estimated to investigate the correlates between independent explanatory variables and these outcomes.

Finally, Chapter 5 concludes with a discussion of the main findings and key takeaways. This chapter contextualizes these findings in the broader theoretical and empirical research on VSPBs and sexual assault case processing. Recommendations for future research advocates for intersecting these separate literature bases to achieve a more holistic understanding of sexual assault case processing. Policy implications are discussed.

Chapter 2 LITERATURE REVIEW

This chapter provides an in-depth review of relevant prior literature.

Public and Legal Discourse on 'Victim Resistance'

While Chapter 1 provided a brief history of victim self-protective behavior research, the legal and public discourse surrounding 'resistance' during sexual assault attacks is deeply ingrained in historical and societal *rape myths* which serve to reinforce stereotypical depictions of sexual assault that do not reflect the overwhelming majority of victimization experiences (Planty et al., 2013). In particular, rape myths are "ubiquitous attitudes about the causes, consequences, perpetrators, and victims of sexual violence" (O'Neal & Hayes, 2020, p. 29). Historically, rape myths regarding victim 'resistance' are contradictory. On the one hand, though no longer true, law enforcement has been historically known for advising women to not resist a sexual assault attack (Dardis et al., 2018). This sentiment, nevertheless, contradicted the historical sexual assault laws which made 'victim resistance' a compulsory, evidentiary requirement and was exclusive to the crime of rape (Spohn & Horney, 1992). These compulsory 'resistance' requirements made it so there must be evidence the victim "earnestly" or "to the utmost" resisted—often demonstrated by physical injuries to the victim or perpetrator—until their gradual abolishment as a result of the rape law reform movement in the 1970s-80s (Estrich, 1987; Spohn & Horney, 1992). Even after several decades after these nationwide, legislative reforms, *rape myths* dictating that a (truthful) victim would have 'resisted' the sexual assault have crystallized as a common misconception (Carr et al., 2014; Deitz et al., 1984; Randall, 2010).

"Real" Rapes & "Genuine" or "Ideal" Victims

Expanding on *rape myths*, such misconceptions lead to discrediting survivors of sexual assault when their experiences do not align with them (Du Mont et al., 2003; Planty et al., 2013). Early seminal works on this topic (e.g., Estrich, 1987; LaFree, 1987) argued that rape myths surrounding various aspects of sexual assault (e.g., victim resistance) not only existed as opinions among CJS actors but also influenced their decision-making. Accordingly, Estrich (1987, p. 17-18) examined the decades of case law and U.S. statutes carried over from 18th century English common law, in order to find support for her central thesis that:

> crime-related factors which influence the disposition of rape cases are those which distinguish the jump-from-the-bushes ["real"] rape from the simple and suspect rape: a prior relationship between the victim and offender; lack of force and resistance [emphasis added]; and the absence of evidence corroborating the victim's account.

Consequently, she coins the dichotomy, "real rape" and "simple" or "technical" rape to contextualize how sexual assault cases were not treated equally by CJS actors. "Real rape", involves random, violent blitz attacks, often causing serious physical injuries to the victim. Moreover, "real rapes" involve a victim "earnestly" or "to the utmost" resisted the stranger attacker (Spohn & Horney, 1992). As evidence for her argument, Estrich (1987) cited numerous examples where convictions in sexual assault cases were overturned by various appellate courts because the victim was not injured severely enough to prove they 'resisted' "earnestly" or "to the utmost" (see also Spohn & Horney, 1992). Effectively, she underscored that when victims were perceived as not having exhibited adequate self-protective behaviors, their cases were considered less deserving of the finite time and resources of the system. Essentially, this work highlights how victim behaviors, particularly self-protective behaviors (or lack thereof), are scrutinized by CJS actors. However, this scrutiny extends beyond the victim's self-protective behaviors. She adds

that cases may be treated as less worthy of time and resources in the following: the victim and perpetrator were non-strangers (e.g., acquaintances, romantic partners), delayed reporting, a victim who consumed alcohol or drugs prior to the incident (see also O'Neal, 2019).

Moreover, this scrutiny extends to other victim behaviors as evidenced by LaFree's (1981, 1989) seminal research using 905 reported "forcible sexual offenses", which found that police officers discredit victims' accounts of sexual assault if they had engaged in perceived "risk-taking" behaviors (e.g., a juvenile running away or skipping curfew). Further, LaFree (1981, 1989) found that arrest decisions were impacted by a combination of legal (e.g., offense seriousness, perpetrator weapon use) and extralegal victim (e.g., age, race) characteristics. Notably, the legal factors were more influential than the extralegal factors. Recently, O'Neal & Hayes (2020) interviewed 52 sex crime detectives in Los Angeles, which revealed that participants expressed negative attitudes towards victims who had engaged in "risky behavior" such as sex work and voluntary alcohol or drug consumption. Even when detectives expressed neutral or positive attitudes towards these victims, they lamented the challenges of handling cases that deviated from the "real rape" stereotypes. Christie (1986) puts the issue simply: an "ideal victim" of sexual assault is someone "where no blame could be placed upon them [the victim]" (p. 19). In general, these findings underscore the pervasive scrutiny experienced by victims of sexual assault.

Accordingly, scholars argue that cases adhering to "real rape" and "ideal" victim standards receive the most time and resources from CJS actors, thereby making case attrition less likely (Planty et al., 2013). Realistically, however, few sexual assault cases

meet these standards. For example, these conceptualizations exclude victims with a prior relationship with the offender despite the fact that most sexual assaults are perpetrated by someone known to the victim (Planty et al., 2013). These arguments would provide the basis for the bulk of sexual assault research in the decades to come (Pattavina et al., 2021; Richards et al., 2019). In short, cases exhibiting "real" rape characteristics are more likely to see a stronger response from the police and prosecutors rather than experience case attrition (see O'Neal, 2019).

Case Attrition in the Criminal Justice System

Though the current dissertation focuses on CJS actors, it is important to acknowledge that the largest proportion of sexual assault case attrition occurs with the victim's decision to report (Spohn & Tellis, 2014). Without the report, the CJS would never have known the crime had occurred. There are many reasons why victims decide not to report sexual assault. In this regard, research has found that nonreporting is often a byproduct of the victim's feelings of self-blame, shame, guilt, or embarrassment (Cantor et al., 2015). Victims, similar to the general public, are susceptible to *rape myths* which may lead them to feel "at fault" when their experience differs from "real rape" (Fisher et al., 2003; Kaiser et al., 2017). Importantly, an abundance of research suggests that victims fear how criminal justice system actors will treat them when they do report (i.e., not believed, blamed, nothing happening to the perpetrator) (Bachman, 1998; Cantor et al., 2015), which can create additional barriers to reporting (e.g., fear of retaliation) (Fisher et al., 2003; Kilpatrick et al., 2007). Taken together, it is not surprising that victims do not believe the criminal justice system will ensure they receive justice.

Victim Decision-Making: Participation

Victims initiating reports of sexual assault enter the CJS, where their participation profoundly impacts case outcomes (Lovell et al., 2021). In this regard, research consistently identifies victim participation as a key determinant of sexual assault case attrition (Beichner & Spohn, 2005; Lapsey et al., 2023; O'Neal et al., 2015; Pattavina et al., 2021; Spohn et al., 2014; Richards et al., 2019; Kaiser et al., 2017; Morabito et al., 2016). Given that the majority of sexual assaults occur in private, indoor settings where witnesses are rare, the absence of victim participation virtually ensures case attrition in sexual assault cases. For this reason, Lovell et al. (2021) describes victim participation as a "bureaucratic burden" to "remain cooperative" that is further exacerbated by the need to have victims repeatedly retell the traumatic details of their victimization (p. 4; see also Campbell, 2008; Patterson, 2011). Taken together, it is unsurprising that victims choose to withdraw from the long and arduous process the CJS involves.

Barriers to victim participation include the own victim's prescription to *rape myths*, causing them to feel a sense of self-blame or shame about the victimization (Cohn et al., 2013; Fisher et al., 2003; Kaiser et al., 2017; Spencer et al., 2017). Campbell (2012), for instance, in describing tonic immobility, discussed the guilt and shame victims will feel for "freezing" and not engaging in any self-protective behaviors. In effect, victims of sexual assault may require additional support to dismantle preexisting notions of "real rape" in order to alleviate these feelings.

In addition to this, victim participation is further influenced by interactions with CJS actors. In fact, Campbell (1998) coined the phrase *secondary victimization* to describe the negative experiences victims have with the criminal justice system (see also Campbell et al., 2001; Campbell & Raja, 2005). Several studies have used victim

interviews to highlight the prevalent issue of victims feeling mistreated and disbelieved by the criminal justice system regarding sexual assault (Campbell et al., 1999; Campbell & Raja, 2005; Logan et al., 2005). For instance, in a study of Detroit police officers, they admitted to pressuring victims to disengage from the investigation "by being jaded, by being rude, by questioning them aggressively, by threatening them—and in the end, they blamed victims for the fact that no action had been taken in their case due to their 'lack of participation' (pp. 96–97) (see also Page, 2007, 2008, 2010). Notably, this relationship can be explained by adopting the concept of "illusory correlation" from the policing literature, which is used to explain inequal, harsher treatment of minority populations by the police (Smith & Alpert, 2007). Essentially, this theorizes that officers assigned to predominately high-crime areas, coinciding predominantly neighborhoods of color, officers will believe there is a 'correlation' between minorities and criminality, which leads to issues such as racial profiling. In the current context, law enforcement investigating sexual assault cases, by nature of the job, will interact with more false reports of sexual assault than the general population. As a result, this may lead to the development of illusory correlations between victim characteristics associated with dishonesty, which would explain quotes like the one provided above.

Nonetheless, the victim's decision to participate in the investigation is influenced not only by the psychological toll of retelling their stories but also by inadequate institutional responses.

Police Decision-Making: Case Clearance & Forwarding Charging Recommendations

Law enforcement are often the victim's first interaction with the CJS after reporting a crime. Because of this, police are referred to as "gatekeepers" to the CJS,

given the significant impact their decision-making has on case attrition (Kerstetter, 1990, p. 282). There are two important decisions typically associated with the police regarding sexual assault case attrition: (1) the decision to arrest and (2) the decision to forward a case to the prosecutor for charging considerations (Spohn & Tellis, 2014). To understand these decisions, one must understand the importance of *case clearance.*

According to the Federal Bureau of Investigation (FBI) guidelines (2013), there are two categories of case clearance: (1) cleared by arrest or (2) cleared by exceptional means. Police agencies are heavily evaluated on their ability to "clear" cases, which refers to closing cases by arrest or exceptional means. The FBI guidelines restrict the use of exceptional clearance to cases where a thorough investigation has been completed to the extent there is a known suspect, and there is probable cause to make an arrest; however, the arrest cannot occur due to reasons outside a police officer's control – i.e., the suspect died, the victim declined to participate, or denial of extradition (e.g., the suspect died) (FBI, 2013, pp. 115–116). This means the crime was "solved," but it will not advance to the next stage in the criminal justice system (i.e., case attrition). In addition to clearing cases, cases may also be "unfounded," which means the investigation revealed that no crime had occurred. Though cleared by arrest is self-explanatory, cleared by exceptional means requires elaboration.

Most sexual assaults are not cleared by an arrest (Morabito et al., 2016; Planty et al., 2013). In particular, an estimated 1:5 sexual assault reports are cleared by arrest (Alderden & Ullman, 2012; Morabito et al., 2019; Spohn & Tellis, 2012). Though law enforcement often reports high "clearance rates" in sexual assault cases, most are cleared by exceptional means (Addington & Rennison, 2008; Planty et al., 2013; Spohn & Tellis,

2012, 2014; Walfield, 2016). Within the exceptional clearance designation, most cases are exceptionally cleared due to a *lack of victim participation* or *prosecutorial declination* (Bouffard, 2000; Richards et al., 2019; Spohn & Tellis, 2014). This has led some to question whether sexual assault cases experience misuse of the exceptional clearance designation (Lovell et al., 2021; Spohn & Tellis, 2014).

Scholars contend that a contributor to high rates of exceptional clearances in sexual assault cases is the result of CJS actors' inaccurate perceptions of the victim's participation (Bouffard, 2000; Lovell et al., 2021; Spohn & Tellis, 2010). For example, preliminary evidence shows that sexual assault cases have been cleared by exceptional means after minimal investigative effort and minimal contact with the victim (Atassi, 2014; Dissell, 2012; Lovell et al., 2021; Maryland Coalition Against Sexual Assault, 2011; Spohn & Tellis, 2014). In the study mentioned above on Detroit police officers, one sexual assault detective stated, "she has to prove she wants this ... then I'll take a look" (Campbell & Fehler-Cabral, 2018; p. 89). Consequently, exceptional clearances due to an uncooperative victim are where many sexual assault cases experience attrition.

In addition to the arrest decision, police may forward a case to the prosecutor for charging considerations *before* making an arrest (i.e., case referral) (Holleran et al., 2010; Spohn & Tellis, 2014, 2019). Cases are referred for prosecutorial decision-making in approximately 50% of sexual assault investigations (Alderden & Ullman, 2012; Kelley & Campbell, 2013; O'Neal & Spohn, 2017; Wentz, 2020). Spohn and Tellis (2019) provided a novel analysis of the Los Angeles police department and found that detectives and prosecutors often have "off the books" conversations about the nature of cases and their likelihood of resulting in charges. As a result, cases are cleared via exceptional means

rather than *formally* forwarded to the prosecutor for an official justification for declining charges. Taken together, amplifying the impact of exceptional clearances on sexual assault case attrition is the tremendous influence prosecutors have over police decision-making. Recent research has continued to demonstrate that a meaningful proportion of case attrition via exceptional clearances is due to the prosecutor both formally and informally declining to charge suspects of sexual assault (Richards et al., 2019; Spohn & Tellis, 2019; Yeung et al., 2018). Since these informal discussions are common, the current project will focus on the police decision to forward a case to the prosecutor for charging considerations.

Prosecutor Decision-Making: Charging Considerations

Based on the discussion provided above, it is unsurprising that, while police are the "gatekeepers" to the criminal justice system, prosecutors are referred to as the "gatekeepers" to justice (Kerstetter, 1990). This designation is fitting because prosecutors have the ultimate discretion regarding filing charges (Spohn, 2020). Beyond this, prosecutors are responsible for plea bargaining, possible sentencing recommendations, and other decisions that are largely hidden from the public (Morabito et al. 2019; O'Neal et al. 2015). Further, police and prosecutors often have informal discussions regarding sexual assault cases, which hinders transparency in decision-making. Consequently, few cases are formally reviewed by the prosecutor for charging considerations; however, when they are, most receive a declination letter explaining why charges will not be filed (Acquaviva et al., 2022; Beichner & Spohn, 2012; Kelley et al., 2021; Spohn & Tellis, 2014, 2019). Alderden and Ullman (2012), for example, analyzed 465 reported sexual assault cases and found that 35.2% of cases resulted in an arrest, and, of those, only

39.1% of cases were charged.[7] The authors interpreted this as an "overall attrition rate" of 9.7%. Notably, this study found that most cases of attrition occurred with law enforcement's decision to arrest.

In terms of factors impacting the decision to file charges, studies show that conviction rates are the primary metric of success for prosecutors, making a case's convictability a key consideration in the decision to charge a suspect (O'Neal et al. 2015; Spohn & Tellis, 2014). Accordingly, short of "slam dunk" cases in which conviction is almost guaranteed, research shows prosecutors are unlikely to file charges in sexual assault cases (Beichner & Spohn, 2005).

Legal and Extralegal Influences on Case Attrition

There has been a tremendous degree of research regarding the victim, suspect, and case characteristics predicting sexual assault case attrition, especially regarding victim participation and CJS actors' decision-making (see for reviews Lapsey et al., 2022, 2023; Meeker et al., 2019). In general, these characteristics are described as either *legal* or *extralegal.* The former refers to the elements of a case that raise legal issues (Spohn, 2020). For example, the strength of the evidence for/against a defendant is legally relevant to meeting statutory requirements of a crime (e.g., Spohn et al., 2001). The latter refers to factors legally irrelevant to the case but influence decision-making nonetheless (Meeker et al., 2019). For example, demographic characteristics of the victim or offender have been criticized for undue influence over decision-making (Kelley et al., 2021).

Extensive research finds that both legal and extralegal factors are associated with police and prosecutorial decision-making and sexual assault case attrition (e.g., case

[7] The authors do not look at informal case referrals.

referrals, charging) (e.g., Alderden & Ullman, 2012; Beichner & Spohn, 2005; Bouffard, 2000; Du Mont et al., 2003; Holleran et al., 2010; Meeker et al., 2019; Richards et al., 2019; Spohn & Tellis, 2014). Though the victim's decision to participate in the CJS is typically not framed as legal or extralegal, nevertheless, the victim's decision to participate in the CJS has been linked to factors such as the crime's seriousness, the severity of the victim's injuries, or the victim-perpetrator relationship (Kerstetter & Van Winkle, 1990; Spohn et al., 2001; Tellis & Spohn, 2008).

With regard to CJS actors' decision-making, legal factors have tended to exert a stronger influence on police and prosecutorial decisions in sexual assault cases compared to extralegal factors. (Acquaviva et al., 2022; Alderden & Ullman, 2012; Campbell et al., 2009; George et al., 2022; King & Bostaph, 2023; Lafree, 1981; O'Neal et al., 2015; O'Neal & Spohn, 2017; Wentz, 2020). Legal factors that influence these decisions include whether additional charges accompanied the sexual assault, the offender used a weapon, the victim sustained injuries, availability of physical and forensic evidence, and whether there were corroborating witnesses (Addington & Rennison, 2008; Bouffard, 2000; Johnson et al., 2012; Kelley & Campbell, 2013; Morabito et al., 2019; Tasca et al., 2013; Spohn & Tellis, 2014). In particular, victim participation is consistently one of the strongest predictors of case attrition (Beichner & Spohn, 2005; Lapsey et al., 2023; O'Neal et al., 2015; Pattavina et al., 2021; Spohn et al., 2014; Richards et al., 2019; Kaiser et al., 2017; Morabito et al., 2016).

In addition to legal factors, research has identified several extralegal factors which influence police and prosecutorial decision-making in sexual assault cases (Acquaviva et al., 2022; Alderden & Ullman, 2012; Campbell et al., 2009b; George et al., 2022; King &

Bostaph 2023; Lafree, 1981; O'Neal et al., 2015; O'Neal & Spohn, 2017; Wentz, 2020). In particular, the extralegal characteristic that most strongly predicts case attrition is the CJS actors' perception of the victim's credibility (Alderden & Ullman, 2012; Beichner & Spohn, 2005; Frohmann, 1991; Hohl & Stanko, 2015; Jordan,2004; Kaiser et al., 2017; Kelley & Campbell, 2013; Morabito et al., 2019; O'Neal et al., 2015; Murphy et al., 2014; Spohn & Tellis, 2019; Walfield, 2016). Research has even found that physical evidence is less important than victim credibility among some investigators (Menaker et al., 2017). As a reminder, victim self-protective behaviors (also known as 'victim resistance') have also been tied to perceptions of "real rape" and the "ideal victim" (Christie, 1986; Estrich, 1987; Frohmann, 1991; LaFree, 1987). In particular, a prevalent *rape myth* suggests that any (truthful) victims of sexual assault will universally resist; though, research has not examined whether there is a direct link between this and CJS actors' decision-making (Dardis et al., 2018; Hollander & Rodgers, 2014).

Another extralegal factor is the victim-perpetrator relationship, but examinations of this are mixed. Some studies find that case attrition is more likely in sexual assault cases involving strangers compared to non-strangers (Campbell et al., 2012) which contradict hypotheses these that stranger sexual assaults are more likely to advance through the CJS because it coincides with perceptions of "real rape" (Estrich, 1987; O'Neal et al., 2019). However, many have attributed this relationship to the increased difficulties stranger sexual assault investigations present in terms of suspect identification (Chopin et al., 2021; LaFree, 1981; Lapsey et al., 2022; Hewitt & Beauregard, 2017). In contrast, other studies have found that case attrition is less likely when the victim and

suspect were strangers (Alderden & Ullman, 2012b; Bouffard, 2000; Tasca et al., 2013; Morabito et al., 2016, 2019).

Additionally, extralegal characteristics such as the incident location (Richards et al., 2019) and the race/age/gender of the victim or suspect have been found to be significantly associated with decision-making as well (Addington & Rennison, 2008; Bouffard, 2000; Beichner & Spohn, 2012; Du Mont et al., 2000; Kingsnorth et al., 1999; Spohn et al., 2001; Spohn & Holleran, 2001; Spohn & Holleran, 2001; Spohn & Tellis, 2012; Tellis & Spohn, 2008; O'Neal, Tellis et al., 2015; Pattavina et al., 2016).

Theoretical Framework

There are several theoretical frameworks for *why* certain legal and extralegal characteristics have a stronger impact on case attrition compared to others. Theoretical frameworks such as "uncertainty avoidance," "downstream orientation," and "focal concerns" are discussed here. This section situates victim self-protective behaviors in these existing frameworks.

Some of the earliest theories on the decision-making of criminal justice system actors were concerned with judicial decision-making. In particular, Albonetti (1986, 1987, 1991) proposed a novel *theory of uncertainty avoidance* to describe the vital decisions made by criminal justice system actors in an environment where time and resources are scarce. In further elaboration, Albonetti argues that criminal justice system actors exercise a tremendous degree of discretion, which leads to intense pressure to make the most "right," "optimal," or "efficient" decisions. The pressure is intensified when considering the high caseloads, understaffing, and limited information that often characterizes local criminal justice systems. In the face of uncertainty, criminal justice

system actors must develop a sense of *perceptual shorthand*—which involves using anecdotal experiences and stereotypical assumptions about how to best triage cases (Albonetti, 1987). For example, prosecutors will use their perceptual shorthand to estimate which cases are most likely to result in a conviction. As a result, decision-making occurs within the confines of *bounded rationality,* which is often based on anecdotal experiences and extralegal characteristics (e.g., rape myths and victim credibility).

Notably, Frohmann (1991, 1997) coined a similar phrase, *downstream orientation*, which, akin to bounded rationality, postulated that prosecutors are chiefly concerned with a case's convictability, which leads them to anticipate how a jury or defense attorney will "interpret and respond to a case" (p. 535). In doing so, Frohmann (1991, 1997) argued that prosecutors, through their concerns about the jury's reaction to victim credibility, inadvertently permit extralegal factors to influence their decision-making. For instance, interviews with prosecutors reveal that they are closely familiar with cases most likely to result in a conviction, which is used in their decision-making calculus (Alderden et al., 2021; Morabito et al., 2019). Of course, without charging a case, prosecutors never actually receive confirmation if their assessment of the case's convictability was accurate. Consequently, the prosecutor's desire to ensure a high conviction rate leads to them declining to charge cases that meet the legal requirements to do so in lieu of adopting an informal "convictability" or "trial sufficiency" standard (Campbell, 2008; Spohn & Tellis, 2014; Wentz, 2020).

Moreover, research has demonstrated that prosecutors' perceptions of case convictability have a further *downstream effect* on police decision-making (Spohn &

Tellis, 2012). St. George and colleagues (2022), for instance, used a sample of notes from 52 sexual assault detectives describing how they weighed arrest decisions. The authors found that although detectives were aware that an arrest only required *probable cause* that a crime occurred, many were "oriented" to the prosecutor's higher standard for filing charges (St. George et al., 2022, p. 91). Put another way, detectives did not see the utility in making an arrest when they knew the prosecutor would not file charges and the suspect would be released. Moreover, O'Neal and Hayes (2021) conducted qualitative interviews with police officers, revealing their recognition that prosecutors frequently prioritize cases conforming to "real rape" and "ideal victim" standards; consequently, officers anticipate that their case referrals will be declined. Taken together, these perspectives provided the foundation for a more formal articulation of decision-making by criminal justice system actors.

Focal Concerns Perspective

Though the focal concerns perspective (FCP) was initially a theory of judicial sentencing decisions, this perspective has become one of the predominate theories for police and prosecutorial decision-making in sexual assault cases (Hartley et al., 2007; Kaiser et al., 2017; Lapsey et al., 2022, 2023; O'Neal & Spohn, 2017). Steffensmeier and colleagues (1998) argued that, consistent with Albonetti's *bounded rationality*, criminal justice system actors are constrained in time, resources, and information with which to inform their decision-making. Consequently, these actors are 'focally concerned' with three key case characteristics when making decisions: (1) blameworthiness (e.g., defendant's moral culpability), (2) protection of community (e.g., perceived

dangerousness to the community), and (3) practical constraints (e.g., resources, caseloads).

First, *blameworthiness* is defined as the defendant's "culpability and having the punishment fit the crime or "harm" it has caused" (Steffensmeier et al., 2017, p. 4). In short, it is the degree to which the CJS actor perceives the suspect to be responsible or guilty. Prior research has often measured blameworthiness using the offense severity (e.g., violent v. property, felony v. misdemeanor), offender's prior criminal history, offender's prior history of victimization (i.e., mitigates blameworthiness), and the offender's role in the offense (e.g., leader v. follower) (Steffensmeier et al., 1998, 2017; Steffensmeier & Demuth, 2001). Steffensmeier and colleagues (1998) argued that offense seriousness, as a measure of blameworthiness, should be the most significant factor in predicting sentencing.

Second, *protection of the community* (i.e., community protection) shares conceptual and measurable overlap with blameworthiness. The key distinction lies in their focus: community protection emphasizes deterrence, whereas blameworthiness centers on culpability (Steffensmeier et al., 1998). This construct centers on the perceived dangerousness of the offender to the community, emphasizing the need for potential incapacitation of the defendant while also having a deterring effect on the defendant and other potential offenders (Steffensmeier et al., 2017). Using judges as an example, Steffensmeier et al. (1998) refer to Albonetti's *bounded rationality* and the desire to protect the public by preventing recidivism. Practically, judges implicitly base such decisions on extralegal characteristics such as the defendant's age, gender, or race/ethnicity (Wooldredge, 2010). Studies have interchangeably used measures such as

the nature of the offense and prior criminal history as a measure of blameworthiness (Lapsey et al., 2023; Steffensmeier & Demuth, 2001). Additional measures of community protection have included the offender's use of a weapon, education, family history, employment, and substance use disorders (Lapsey et al., 2023).

Third, *practical constraints* refer to the unavoidable limitations of the criminal justice system's finite time and resources. There are two types of practical constraints: (1) organizational constraints and (2) individual constraints (Steffensmeier et al., 1998). The former refers to the constraints of maintaining positive working relationships among other members of the courtroom workgroup (e.g., defense attorneys, judges, prosecutors) in order to ensure a "stable flow of cases" while also being cognizant of resource limitations (Steffensmeier et al., 1998, p. 767). Organizational constraints can additionally refer to community politics and norms of the locality or state. The latter constraints refer to the individual offender's "ability to do time" with considerations for whether the offender has health conditions, special needs, dependent family members (e.g., children), and so on (Steffensmeier et al., 2017). Most measures for practical constraints focus on the investigative aspects such as whether physical evidence was collected/analyzed, the suspect was interviewed, the victim cooperated, and the victim-suspect relationship (Alderden & Ullman, 2012; Kaiser et al., 2017; O'Neal & Spon, 2017).

Theoretical Applications to Sexual Assault Case Attrition

In the sexual assault case processing literature, the focal concerns perspective is used to contextualize criminal justice system actors' decision-making, particularly with regards to police (Alderden & Ullman, 2012; Kaiser et al., 2017; Morabito, Williams, & Pattavina,

2019; O'Neal et al., 2019; O'Neal & Spohn, 2017; Spohn & Tellis, 2019) and prosecutors (Beichner & Spohn, 2005; Kingsnorth et al., 1999; O'Neal & Spohn, 2017; Spohn & Holleran, 2001). Lapsey et al. (2023, p. 2) summarize FCP's application to sexual assault as the following:

> …because of limited time, resources, and information, practitioners often rely on a "perceptual shorthand" based on extralegal variables often associated with misconceptions, stereotypes, and characteristics incorrectly interpreted by practitioners to represent "real rape" … [which leads]…practitioners [to] make decisions with a *downstream approach* [emphasis added] where police are influenced by whether they believe prosecutors will accept charges and prosecutor decisions are affected by case "convictability"… (Lapsey et al., 2023, p. 2).

There are key distinctions between the traditional application of FCP on judicial sentencing decision-making and how researchers have applied FCP to sexual assault case attrition. Former scholars (Albonetti, 1986, 1987, 1991; Steffensmeier et al., 1998, 2017) traditionally focused on the perceptions of the *suspect's* blameworthiness and threat to community (i.e., community protection).

However, when applied to sexual assault case attrition, FCP has been modified to give equal, if not more, consideration to CJS actors' perceptions of the victim's blameworthiness (O'Neal & Spohn, 2017). This is corroborated by studies showing that the perceived credibility of the victim plays a significant role in predicting case attrition (Beichner & Spohn, 2012; Spohn & Tellis, 2014). For example, in the context of victim self-protective behaviors, hypothetical vignette studies have shown that the lack of these behaviors is associated with greater attributions of blame to the victim among laypersons (e.g., Angelone et al., 2015). Further, Rawn and colleagues (2023) used experimental vignettes to demonstrate that attributions of victim blame, and suspect culpability had a direct, inverse relationship. As a result, the lack of victim self-protective behaviors

simultaneously increased attributions of victim blame and decreased attributions of suspect culpability. Taken together, FCP's application to sexual assault considers both.

In terms of community protection, in the context of sexual assault, when the victim is perceived as bearing blame for the incident, then the suspect's behavior may be perceived as inherently less dangerous to the community. This underscores the intricate interplay between the attributions of blameworthiness and the perceived dangerousness of the suspect. In the context of victim self-protective behaviors, "real rape" is viewed as the most violent, aggravated sexual assault. Consequently, an "ideal" victim would likely engage in *physical* strategies (e.g., hitting) over verbal strategies (Estrich, 1987; O'Neal et al., 2019). This legal bias is supported by the previously discussed 'victim resistance' requirements in (now repealed) U.S. rape statutes, where the prevailing method for meeting this requirement relied on showing that the victim was physically injured (Estrich, 1987; Spohn & Horney, 1992). Accordingly, the presence of an injured victim is also tied to perceptions of the danger the perpetrator poses to the community (Steffensmeier et al., 1998, 2017).

Lastly, in terms of practical constraints, it is not surprising that victim participation is a primary concept relevant to the focal concerns perspective (O'Neal & Spohn, 2017). Without victim participation, it is nearly impossible to proceed with charging a suspect. However, FCP does not take into account studies showing that victim participation may be influenced by negative interactions with the CJS (Campbell & Raja, 2005; Patterson, 2011). Another common practical constraint discussed in the context of sexual assault is suspect identification, which is far less likely when the victim and suspect are strangers (Lapsey et al., 2022, 2023).

Empirical Evidence. In two recent meta-analyses, Lapsey and colleagues (2022, 2023) synthesize the bulk of the literature applying the focal concerns perspective to sexual assault case processing. The authors assess FCP's utility using a combined total of 60 studies and over 1,406 effect sizes. Since the latter meta-analysis builds on the former, the key findings from Lapsey and colleagues (2023) will be summarized.

Lapsey and colleagues (2023) measured suspect blameworthiness using two measures (i.e., suspect physically assaulted the victim and victim injury), protection of the community using one measure (i.e., the suspect used a weapon), and practical constraints using four measures (i.e., some physical evidence, prompt reporting within 72 hours, at least one witness, and victim engagement). Additionally, Lapsey and colleagues (2023) measured perceptual shorthand using eight measures coinciding with extralegal factors, including victim-suspect were strangers, victim-suspect were intimate partners, CJS actors perceived the victim as credible, victim alcohol or substance use, and the victim's physically or verbally 'resistance,'[8] in addition to the age and race of the victim and suspect. In this endeavor, they found support for focal concern's relevance in predicting arrest and charging decisions, though the evidence suggested FCP was better suited for explaining prosecutorial decision-making. This could suggest that law enforcement are less reluctant to make an arrest that may not result in charges than prosecutors are to charge cases that might not result in a conviction.

Further, contrary to Steffensmeier and colleagues (1998, 2017) hypothesis that blameworthiness and community protection should have the strongest association with

[8] Sample included intimate partner sexual assault, which is a distinct form of violence from sexual assault (Bostaph et al., 2021; O'Neal & Spohn, 2017) and Canadian samples (Kelley et al., 2021; Salerno-Ferraro & Jung, 2021). All used dichotomous or trichotomous measures which were non-significant.

decision-making outcomes, Lapsey et al. (2023) found that robust evidence that *practical constraints* have the largest influence on sexual assault case attrition. In fact, suspect blameworthiness and community protection (i.e., offender weapon use) had no significant relationship with the decision to arrest and suspect blameworthiness (i.e., victim injury and severity of attack) only had a small, significant effect on charging decisions (Lapsey et al., 2023).

In terms of practical constraints, victim participation has the strongest effect size predicting arrest and charging decisions, which is consistent with prior research on sexual assault case attrition (e.g., Beichner & Spohn, 2005; Lapsey et al., 2023; O'Neal et al. 2015; Pattavina et al. 2021; Spohn et al., 2014; Richards et al., 2019; Kaiser et al., 2017; Morabito et al., 2016). In contrast, the availability of witnesses to the incident had a small effect on arrest and charging decisions, which is unsurprising given the private nature of most sexual assault perpetrations.

Moreover, perceptual shorthand, consistent with prior research, arrest decisions were less likely when the perpetrator was a stranger to the victim (Lapsey et al., 2023). This finding was inconsistent with traditional FCP, which would expect that stranger assaults indicate a degree of dangerousness to the community (Steffensmeier et al., 1998); the finding is consistent with sexual assault case attrition: victims unable to remember details of the sexual assault are less likely to provide the information police need to identify a suspect, leading to case attrition (Tasca et al., 2013). This implies that the victim-suspect relationship may serve as either a practical constraint or perceptual shorthand, which is consistent with criticisms of FCP regarding the interchangeable use of measures for different theoretical constructs (e.g., Kettrey et al., 2022).

Lastly, Lapsey and colleagues (2023) found that victim credibility has a strong association with prosecutorial charging decisions but not arrest decisions. This finding indicates that victim credibility is more strongly associated with prosecutorial decision-making because it impacts their assessment of the case's overall convictability (Frohmann, 1991, 1997; Spohn & Tellis, 2012). The prior literature demonstrates that victim credibility is one of the strongest predictors of sexual assault case attrition, behind victim participation, which supports the heavy burden the criminal justice system places on victims of sexual assault (Lovell et al., 2021). Overall, the Lapsey and colleagues (2023) concur with prior research that the characteristics impacting police and prosecutor decision-making likely stems from misguided "real rape" assumptions and downstream orientation (see Estrich, 1987; Frohmann, 1991, 1997).

Theoretical Framing of Victim Self-Protective Behaviors. The theoretical frameworks reviewed in Chapter 2 have been applied to sexual assault case attrition for decades (Beichner & Spohn, 2005; Kaiser et al., 2017; O'Neal & Spohn, 2017; Spohn et al., 2001; Spohn & Tellis, 2019). Three studies have applied a focal concerns perspective using a control measure for 'victim resistance.' In this regard, O'Neal and Spohn (2017) applied a FCP to intimate partner sexual assault cases, measuring the victim's verbal and physical resistance (i.e., suspect blameworthiness). The absence of resistance was hypothesized to diminish criminal justice system actors' perceptions of suspect blameworthiness and, therefore, reduce the likelihood of arrest and charging; however, no significant relationship was found. Similarly, Wentz (2020) measured 'victim physical resistance' dichotomously (i.e., suspect blameworthiness) but also found no significant relationship between this and arrest decisions. Lapsey and colleagues (2023), in contrast,

postulated that victim resistance was a measure of perceptual shorthand (i.e., extralegal characteristics) due to its historical linkages to "real rape" (Estrich, 1987). Findings supported the notion that the victim 'resistance' strategies increased the likelihood of arrest and charges; thereby supporting a FCP for explaining sexual assault case attrition (Lapsey et al., 2023). Part of the current study's contributions to the literature is to consider a broader range of VSPBs and how they situate in existing theoretical frameworks.

Summary & Research Questions

There is a considerable body of knowledge on various phenomena related to sexual assault victimization. In this regard, I have identified a critical gap at the intersection of literature on sexual assault case processing and victim self-protective behaviors (VSPBs). On one hand, decades of research have consistently found troubling rates of sexual assault case attrition (Alderden & Ullman, 2012a; LaFree, 1981; Morabito et al., 2019; Spohn & Tellis, 2014). In the criminal justice system (CJS), research has identified that the "locus" of case attrition lies in law enforcement and prosecutors' decision-making (Spohn & Tellis, 2014, p. 3). To understand the correlates of sexual assault case attrition, prior research finds many legal and extralegal factors that influence CJS actors' decision-making (Lapsey et al., 2022, 2023). Among these factors, prior research consistently identifies various victim behaviors under persistent scrutiny by CJS actors (Estrich, 1987; Frohmann, 1991; Spohn, 2020). Behaviors such as alcohol and drug consumption are viewed as "risk-taking" and "credibility-damaging" (O'Neal et al., 2019; Spohn & Tellis, 2014). Indeed, an incredibly large body of literature finds that CJS actors' perceptions of victim credibility consistently predicts case attrition (Lapsey et al.,

2022, 2023; Morabito et al., 2016; Spohn, 2020). Taken together, a recurring theme in the extant literature is that sexual assault places victims' behaviors under persistent scrutiny by CJS actors (Estrich, 1987; Frohmann, 1991; Lapsey et al., 2022, 2023; Spohn, 2020).

On the other hand, prior research finds that survivors engage in various physical, verbal, forceful, and nonforceful strategies to prevent or mitigate the harm from a sexual assault, with some success preventing rape completion without sustaining additional injuries (Wong & Balemba, 2016, 2018). Such findings support the promotion of self-defense programs, advocating for educating potential victims on the benefits of utilizing self-protective behaviors; with physical strategies (e.g., hitting) as the most effective at mitigating a sexual assault (Cermele & McCaughey, 2022; Hollander et al., 2024; Kettrey et al., 2024). However, this perspective assumes that victims *rationally choose* in the moment, weight all costs/benefits, to engage in self-protective behaviors (Cornish & Clarke, 2008; Leclerc & Cale, 2015). This contrasts with emerging evidence indicating that sexual assault often induces a profound level of fear and trauma, triggering distinct involuntary neurobiological responses which influence whether victims opt for *fight* (e.g., fighting back), *flight* (e.g., running away), or are rendered immobile (i.e., *freeze*) (Campbell, 2015; Cuevas et al., 2018; Mathews & Blyer, 2023; Möller et al., 2017). Given previous research indicating that victims often face situations where they must act without the capacity to rationally assess costs and benefits, this study posits that a contemporary investigation should focus on understanding how victims are *perceived* based on their adoption of self-protective behaviors.

Taken together, prior research finds that many victim behaviors undergo rigorous scrutiny by CJS actors, and these behaviors significantly influence variations in sexual

assault case attrition (Spohn, 2020). However, there is a paucity of research investigating whether victim self-protective behaviors are similarly scrutinized and impact CJS actors' perceptions of victim credibility. Therefore, examining the relationship between victim self-protective behaviors and sexual assault case processing is important because of persistent misconceptions that victims universally 'resist' during a sexual assault may permeate into CJS actors' perceptions of victims and subsequent decision-making. Accordingly, understanding these nuances is crucial for enhancing the effectiveness of sexual assault case processing; ultimately reducing case attrition.

To shed light on this overlooked aspect, this dissertation contributed one of the most in-depth (to date) exploration of victim self-protective behaviors and their influence on sexual assault case processing outcomes. Accordingly, I contribute to the broader sexual assault research in three meaningful ways. First, this study joins the handful of studies which have begun to incorporate an understanding of victim self-protective behaviors (VSPBs) with case processing literature (e.g., Bostaph et al., 2021; O'Neal & Spohn, 2017; Wentz, 2020). However, these studies measure 'resistance' dichotomously and do not describe the nuances of how these behaviors were coded. Second, at the time of writing, this study is the first to apply the most comprehensive measurement of victim self-protective behaviors (VSPBs) (see Kleck & Tark, 2004) to a sample of reported sexual assault cases. In doing so, a detailed explanation of the final measures of victim self-protective behaviors is provided to inform future methodological and replication research. Third, this study incorporates several theoretically relevant variables from predominant theoretical frameworks (e.g., legal/extralegal, FCP) to control for the impact of victim self-protective behaviors on key outcomes. In doing so, I contextualize VSPBs

in the broader sexual assault literature in a way previously missing from the literature (Kleck & Tark, 2014).

Third, the VSPB literature has been relatively deficient in theoretical explanations for its relevance which has led to excluding a comprehensive list of theoretically relevant control variables. In other words, the VSPB literature has not been statistically analyzed with measures that are theoretically relevant to predominate perspectives (e.g., downstream orientation, FCP). The study will provide robust statistical analyses using several control variables informed by the critical theoretical and empirical literature (LaFree, 1989; Frohmann, 1991, 1997; Lapsey et al., 2022, 2023; O'Neal & Spohn, 2017; Steffensmeier et al., 2017). This study investigated four research questions spanning two elements of sexual assault case processing: CJS actors' perceptions of the victim's credibility and case attrition in sexual assault cases.

1. Do victim self-protective behaviors (VSPBs) influence CJS actors' perceptions of victim credibility?
2. Do VSPBs influence law enforcement's decision to refer a case to the prosecutor?
3. Do VSPBs influence the prosecutor's decision to file charges?
4. Do VSPBs influence whether a case is convicted?

Chapter 3 METHODS

This chapter describes the current study's methodological approach for examining the relationship between victim self-protective behaviors (VSPBs) and four outcomes related to criminal justice system case processing: victim credibility concerns, law enforcement case referment, prosecutorial charging, and case conviction.

Research Setting

All data for the current study were derived from a sample of 503 unsubmitted SAKs[9] from Anoka County, Minnesota; specifically, the Anoka County Sheriff's Office (ACSO). For added context, the current study stems from a larger endeavor to conduct the Minnesota Sexual Assault Kit Initiative Research Project (hereafter referred to as MN SAKI); a project funded by the National Institute of Justice (NIJ 2019-MU-MU-0095). The MN SAKI partially originated from a mandate in 2015 by the Minnesota legislature (Minnesota 2015 Session Laws, chapter 65, section 37), tasking the state crime laboratory—the Bureau of Criminal Apprehension (BCA)—with identifying all unsubmitted sexual assault kits (SAKs) in the state. The MN SAKI was tasked with research and evaluation of the multidisciplinary team's efforts in Anoka County. For additional contextual information on the MN SAKI, please see Richards et al. (2024).

The ACSO had 133 sworn law enforcement officers as of 2019 (FBI, 2019). In addition to serving the entire county, ACSO is the primary law enforcement agency for eight neighboring municipalities (ACSO, n.d.). Anoka County has an approximate population of 360,773 residents as of 2021, making it the fourth most populated county in

[9] These 503 SAKs represents 504 cases/victims because one SAK was associated with two victims and, therefore, two distinct cases. Both cases were included in the current sample.

Minnesota (DataUSA, 2024). Further, the population of Anoka County is approximately 49.5% female and has a median age of 38.7 years old (U.S. Census Bureau, 2023). In terms of race and ethnicity, residents of this jurisdiction are predominantly White (78.9%), followed by Black/African American (7.34%), and Asian (4.85%); and 4.94% of the population identified as Hispanic (DataUSA, 2024). In 2021, the unemployment rate was <1% and the poverty rate is 5.88% (DataUSA, 2024). Approximately 94.2% of residents had completed high school and 31.5% had completed at least a Bachelor's degree or higher (U.S. Census Bureau, 2023).

Study Sample

The current study sample drew from the 504 sexual assault cases/victims (or 503 untested sexual assault kits) from the MN SAKI. As illustrated in **Error! Reference s ource not found.**, an initial 20 cases were excluded from this study: nine were linked to death investigations (i.e., no allegation of criminal sexual misconduct (CSC)), six involved restricted SAKs (i.e., the victim did not sign a consent form for forensic testing), and five were tested by a different laboratory (i.e., lacking available information). Accordingly, the sample contained 484 sexual assault cases/victims. Then, 14 more cases were excluded: 12 cases had male victims and two cases had a female suspect. These 14 cases were excluded after preliminary bivariate and multivariate analyses revealed insufficient statistical power to discern meaningful differences between these groups given their exceedingly rare occurrence. Finally, one case was removed because it was associated with a homicide investigation with suspected elements of sexual assault, meaning the far majority of study variables were unknown/missing. The **final sample**

includes 469 reported sexual assault cases/victims with a female victim and male perpetrator.

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Since this study uses data from the MN SAKI, all cases included in the analysis were also associated with a *previously untested* sexual assault kit. This means a case was reported, a SAK was collected and, for an unspecified reason, the SAK was *chosen* to remain untested which is distinct from SAKs that are "backlogged" (i.e., "in line" and still await for testing) (Lovell & Langhinrichsen-Rohling, 2023).[10] In the MN SAKI, most cases (66%) had an untested SAK because the case was already charged and/or convicted, therefore the SAK was not needed to meet the legal requirements (Richards et al., 2024).

Nevertheless, the SAK was not tested in real-time with the original investigation, suggesting that this study would not be generalizable to sexual assault cases with a SAK tested in real-time with the original investigation. In order to address this generalizability concern, the MN SAKI collected a control group consisting of all cases with a SAK tested in real-time with the original investigation from 2008-2015.[11] Though only case characteristics (i.e., no VSPBs) were available in this control group, the MN SAKI found

[10] Since original investigators did not have to provide a reason for not testing a SAK, the detective assigned to the MN SAKI reviewed all cases and even had conversations with the original investigators to gain context on why these SAKs were not submitted (Richards et al., 2024).
[11] Digitized records were available going back to 2008 and, therefore, it was not feasible to include control group cases earlier.

very few measurable differences between these groups (see Richards et al., 2024 for full discussion).

Case File Data Collection & Coding Process

Data used in this study was collected during the MN SAKI through extracting information from law enforcement casefiles. These case files comprised all records associated with the case, including, 9-1-1 reports, law enforcement supplemental investigative reports, prosecutorial charging/declination letters, sexual assault nurse examiner (SANE) reports, and forensic laboratory test results (Richards et al., 2024).

Though victim self-protective measures were collected alongside MN SAKI coding, these variables *were not* collected to address project goals. Therefore, all measures included in the current study, except for victim self-protective behavior measures, were archived with the National Archive of Criminal Justice Data (NACJD), meaning they underwent reliability checks in accordance with the MN SAKI Project's "Data and Procedures" (see Richards et al., 2024). Consequently, though all the data were collected together, the data cleaning process differed between the study's key independent measures and all other variables. This section describes these differences in two sub-sections: (1) MN SAKI coding and (2) additional procedures for victim self-protective behaviors.

MN SAKI Coding

Data collection for the MN SAKI required a team of ten individuals who were trained to extract information from the case files and included, two faculty members, six doctoral students, one master's student, and one undergraduate student. Before data collection began, the MN SAKI's principal investigator developed an initial coding

scheme based on a thorough review of the literature. Then, three doctoral students, including myself, also reviewed the extant literature and made suggestions to refine the initial framework. The initial coding framework was pilot tested on three randomly selected cases, where all four coders took detailed notes regarding gaps in the coding framework's conceptual inclusiveness (Schreier, 2012). The four coders reviewed and discussed the pilot test and agreement-based discussions followed until the research team was satisfied with the final list of variables (Belotto, 2018). Once complete, the research team began *deductively* extracting variables from the case files (Spradley, 1979).

Once the final coding scheme was developed, additional persons were trained to assist in coding all MN SAKI case files. As the project coordinator, I trained each additional coder added to the research team. Training sessions were between 30-minutes to 1-hour and covered all necessary background on the project and reviewed the coding framework. Given the heterogeneous and nuanced nature of the data it was important to conduct regular check-ins to ensure all team members were coding measures consistently. Going forward, I scheduled bi-monthly, 1-hour to 1.5-hour data meetings to discuss unique or difficult-to-code cases. Agreement-based discussions were used to ensure reliability in the coding and the principal investigator and project coordinator were available for individual consultation at any time (Hsieh & Shannon, 2005; Janesick, 2015; Olmos-Vega et al., 2023; Manning, 1997). Any discrepancies in coding were decided by the principal investigator.

Additional Procedures for Victim Self-Protective Behaviors

While all victim self-protective behaviors were collected during the MN SAKI, these measures were not archived at the conclusion of the project and, therefore,

additional procedures were required to assess the reliability of data collection. Original data collection for VSPBs were derived from prior work using the NCVS's self-protection framework (see Kleck & Tark, 2004, 2014). In doing so, 16 non-mutually exclusive self-protective behaviors were deductively extracted from the case file records as a series of dichotomous variables (0 = not present; 1 = present). Table 3.1 presents the original names and definitions used during MN SAKI coding.

Table 3.1. Original Deductive Codes for Victim Self-Protective Behaviors

Name	Definition
1. GUNATACK	V attacked O with gun; fired gun
2. GUNTHRET	V threatened O with gun
3. NOGUNATK	V attacked O with other weapons (knife, etc.)
4. NOGUNTHR	V threatened O with other weapon (knife, etc.)
5. NOWEPATK	V attacked O without weapon (hit, kicked, etc.)
6. NOWEPTHR	V threatened without weapon
7. STRUGGLE	V struggled, ducked, blocked blows, held onto property
8. CHASHELD	V chased, tried to catch or hold O
9. SCAREOFF	V yelled at O, turned on lights, threatened to call police
10. COPRSTALL	V cooperated, or pretended to (stalled, did what they asked)
11. ARGUE	V argued, reasoned, pleaded, bargained, etc.
12. RANHIDE	V ran or drove away, or tried; hid, locked door
13. CALLPOL	V called police or guard
14. GETHELP	V tried to attract attention or help, warn others (cried out for help, called children inside)
15. SCREAM	V screamed from pain or fear
16. OTHER	V did other response

To assess the accuracy of the VSPB coding, a random sample of cases were selected for blind recoding (O'Connor & Joffe, 2020). Specifically, two stratified random samples were selected: one from the original 298 cases where at least one type of SP behavior was present and one from the 185 cases where no SP behaviors were found. Next, within cases where any VSPBs were detected (N=298), I further stratified the sample by VSPB subtype using another round of stratified random sampling (10% from each subtype). Though an initial stratified random sample of 10% of cases were selected

from each stratum—in order to account for selecting short or incomplete case files—additional cases were randomly selected until saturation had been reached (O'Connor & Joffe, 2020). All in all, 144 of 469 (30.70%) case files underwent blind recoding. This notably exceeds the recommended 10-25% (O'Connor & Joffe, 2020).[12]

Each randomly selected case file record was read in-depth and involved identifying instances of VSPBs in either the law enforcement officers' supplemental investigation reports or the transcript of the victim's statement. During the recoding process, I maintained a reflexivity journal (Olmos-Vega et al., 2023) to reflect on coding nuances and participated in weekly "peer debriefings" with the MN SAKI principal investigator (Hsieh & Shannon, 2005; Janesick, 2015; Olmos-Vega et al., 2023; Manning, 1997). Discrepancies in the original and recoding decisions were resolved through peer debriefings, consultation with the MN SAKI research protocol, and the extant literature. In doing so, these discussions aimed to mitigate potential biases and ensure credibility in recoding decisions (Hsieh & Shannon, 2005; Janesick, 2015).

This process revealed that the VSPB measures required more detailed definitions which more accurately reflect the conceptual variability evident in these data. For example, one important change to operationalization was made with regard to the dichotomous measures SCAREOFF and SCREAM. The recoding process revealed two important observations. First, victim descriptions often overlapped, with phrases like "I screamed, 'Go away!'" appearing in both categories. Second, the relevant literature (Ullman, 2007, 2014; Wong & Balemba, 2018) conceptualizes these behaviors as similar

[12] Even if a case was randomly selected from the ARGUE stratified sample, all VSPBs were checked. Since a thorough review of the case file was necessary to identify a single VSPB, checking for all VSPBs during this process presented minimal additional effort. By employing this method, more coding decisions were verified.

forms of forceful, non-verbal resistance. In a specific peer debriefing, it was decided that these behaviors collapse into a combined "SCAREOFF or SCREAM" measure. Table 3.2 includes the final 14 victim SP behaviors included in the current study and Appendix A contains example of each SP behaviors using quotes from the case files.

Table 3.2. Current Study's Individual Victim Self-Protective Behaviors

Name	Definition
1. GUNATACK	Victim attacked perpetrator with gun; fired gun.
2. GUNTHRET	Victim threatened perpetrator with gun.
3. NOGUNATK	The victim attacked the perpetrator with another type of weapon outside of a gun (e.g., knives, tools, broom).
4. NOGUNTHR	The victim threatened the perpetrator with another type of weapon outside of a gun (e.g., *threatened using* knives, tools, broom).
5. NOWEPATK	The victim attacked the perpetrator using means outside of a weapon (e.g., hit, slap, scratch kick, bite). *Note that behaviors associated with this do not overlap with STRUGGLE.*
6. NOWEPTHR	The victim threatened the perpetrator using means outside of a weapon (e.g., *threatened to* hit, slap, scratch kick, bite).
7. STRUGGLE	The victim struggled against the perpetrator or attempted to block their attacks (e.g., pushed, removed hand from body, ducked). Though unlikely, holding onto personal property (e.g., purse) is included. *Note that behaviors associated with this do not overlap with NOWEPATK.*
8. CHASHELD	The victim chased, caught, or tried to catch/hold onto the perpetrator.
9. SCAREOFF or SCREAM	The victim attempted to scare off the perpetrator by yelling/shouting at them, turning on the lights, threatening to call the police, and similar behaviors. Also includes when the victim screamed from pain or fear of the perpetrator. *Note that behaviors associated with this may overlap with ARGUE. The distinction is volume: did the victim say this to the perpetrator, or did they shout it?*
10. COPRSTALL	The victim communicated cooperating, or pretending to, with the perpetrator either in fear, to stall for time, or another reason outside of providing willing consent (e.g., did what the perpetrator asked).

	Note that victims "freezing" and describing this as outside of their control would not be included.
11. ARGUE	The victims argued, reasoned, pleaded, bargained, lied to, or otherwise used words against the perpetrator, including crying. *This assumes communication was done at a level tone. When the victim was screaming or shouting, then it constitutes SCAREOFF or SCREAM.*
12. RANHIDE	The victim ran or drove away (or tried to), or attempted to hide from the perpetrator (e.g., locked door).
13. CALLPOL	The victim called the police or security guard during the incident or immediately after in order to 'escape' the perpetrator (e.g., called 911). *Note in this sample all cases were eventually reported to the police, so simply speaking with the police post-incident would not be included.*
14. GETHELP	The victim attempted to attract attention from third parties for help, a distraction, or to warn others (e.g., called children inside, texted family/friends, asked someone to call 911 for them).
15. OTHER	The victim engaged in behavior not currently captured by existing options.

As illustrated, definitions of SP behaviors were expanded to more accurately reflect the nuances evident in the case files. Measures with conceptual overlap were distinguished based on the (1) person or object the behavior is targeted at and (2) intensity or forcefulness of the behavior. For example, CALLPOL, GETHELP and SCAREOFF or SCREAM all involve the act/attempt/threat to call 911. However, all three are mutually exclusive from each other: CALLPOL is distinguished by the victim calling the police; GETHELP is distinguished by the victim *asking someone else* to the police for them; and SCAREOFF or SCREAM is distinguished by the victim *threatening the perpetrator* with calling 911. In another example, the MN SAKI coders originally interpreted NOWEPATK and STRUGGLE interchangeably in a lot of cases. However, these are mutually exclusive from one another based on the defensive or offensive nature of the

behavior: STRUGGLE is distinguished by defensive behaviors (e.g., pushing away/off, removing perpetrator's hands from oneself); whereas NOWEPATK is distinguished by offensive behaviors (e.g., hit, kicked, bite). In a way, this can be thought of as simply stopping versus attempting to injure the perpetrator.

Intercoder Reliability

Two forms of intercoder reliability were calculated to assess the consistency between the original and blind recoding of the self-protective behaviors. First, percentage-agreement was calculated by taking the total number of discrepancies identified and dividing it by the total number of cases rechecked (Campbell et al., 2013) (see Table 3.3). The first four measures achieved perfect agreement because none had been found in the original coding or the blind recoding. High agreement (90% or above) was found for all VSPBs except STRUGGLE and ARGUE, which fell within the 80-89% range (Campbell et al., 2013).[13] Campbell et al. (2013) also recommends calculating an overall ICR reliability by dividing the total number of agreements by the total number of codes. After certain dichotomous measures were collapsed, there were 14 individual VSPB measures which resulted in a total of 2,016 codes. In total, there were 147 disagreements between the original coding and the blind recoding. This results in an overall intercoder agreement of 93.62%. Prior literature has found 80% to be the minimum threshold for "high agreement" (Campbell et al., 2013; Campbell & Johnson, 1997).

[13] This discrepancy likely reflects Type II errors, where behaviors initially coded as absent (0) were identified during my review. Upon closer examination, these behaviors (STRUGGLE and ARGUE) were often only found within a single sentence of the victim's statement and completely absent in the police report. Given the high number of measures coded per case in MN SAKI (up to 150), it's understandable why these infrequent occurrences might have been missed. However, this also leads me to conclude that most discrepancies in those codes are Type II errors, which only indicates the measure may slightly undercount the "true" number of VSPBs used in the dataset.

Table 3.3. Intercoder Reliability Method 1: Percentage-Agreement

Name	Number of Cases Rechecked	Number of Discrepancies Identified	% Agreement
1) GUNATACK	144	0	100.00%
2) GUNTHRET	144	0	100.00%
3) NOGUNATK	144	0	100.00%
4) CHASHELD	144	0	100.00%
5) NOGUNTHR	144	2	98.61%
6) NOWEPTHR	144	4	97.22%
7) CALLPOL	144	6	95.83%
8) COPRSTALL	144	8	94.44%
9) NOWEPATK	144	12	91.67%
10) GETHELP	144	12	91.67%
11) RANHIDE	144	13	90.97%
12) SCAREOFF or SCREAM	144	14	90.28%
13) STRUGGLE	144	18	87.50%
14) ARGUE	144	27	81.25%
Cases with at least one VSPB identified	88	-	100.00%
Cases with no VSPBs identified	56	7	87.50%

Notes. 1. The Other category was excluded because all were recoded into an existing category.

In addition to the percentage-agreement method, a Cohen's kappa - κ - test for intercoder reliability was also assessed (Cohen, 1960). As shown in Table 3.4, seven VSPBs reached a "substantial" to "almost perfect agreement" and three reached a "moderate" level of agreement (McHugh, 2012). One measure, NOWEPTHR, had a relatively low κ but for two reasons, this is not concerning. First, there were only five cases coded as NOWEPTHR in the entire sample. Of these, four cases were determined, through peer debriefing, to be more appropriately coded as evidence of STRUGGLE. Second, there were no instances of Type II errors on NOWEPTHR. This suggests the

measure captures true negatives effectively. Excluding this measure, the average κ = .72 ("substantial agreement") (McHugh, 2012)[14].

Table 3.4. Intercoder Reliability Method 2: Cohen's kappa

Variable	Kappa (κ)
At least one self-protective behavior reported	0.887
COPRSTALL	0.816
NOWEPATK	0.744
NOGUNTHR	0.743
STRUGGLE	0.736
SCAREOFF or SCREAM	0.710
CALLPOL	0.704
RANHIDE	0.659
ARGUE	0.619
GETHELP	0.602
NOWEPTHR	0.325

Notes. 1. Kappa scores ≤ 0 indicates no agreement; 0.01-0.20 indicates none to slight agreement; 0.21-0.40 indicates fair agreement; 0.41-0.60 indicates moderate agreement; 0.61-0.80 indicates substantial agreement; and 0.81–1.00 indicates almost perfect agreement (McHugh, 2012). 2. Any SPBs with 100% percentage agreement were excluded from analyses because the Cohen's kappa requires variability between coders (i.e., GUNATACK; GUNTHRET; NOGUNATK; NOGUNTHR; CHASHELD).

Together, these intercoder reliability checks triangulated areas in which the conceptual and operational definitions of VSPB measures required added clarity. At the time of writing, efforts are underway to recode all cases in accordance with the updated definitions.

Measures

Dependent Variables

Four outcomes correspond to the four research questions guiding the current project: victim credibility concerns, law enforcement case referral, prosecution filed charges, and

[14] It is worth recognizing an important limitation of using the Cohen's kappa in this context. Lombard et al. (2002) note that this test is intended to compare a novel, exploratory measure against a measure with existing validation in prior literature. In the current context, the original and blind recoding reflect an exploratory application of the coding framework.

case convicted. Each outcome was selected based on its ability to contribute to the prior VSPB literature (Rawn et al., 2023) and prior sexual assault case attrition literature (Lapsey et al., 2022, 2023). Table 3.5 presents the univariate statistics for study outcomes.

To answer Research Question 1, ***victim credibility concerns*** is measured based on whether any criminal justice actor made a written statement questioning, doubting, or having concerns with the truthfulness or credibility of the victim in the case file record (0 = No credibility concerns, 1 = Yes there were credibility concerns). By using written statements, this serves as a proxy measure for perceptions of victim credibility concerns. Three examples of victim credibility concerns are provided. First, in one case, a law enforcement officer included the following statement in their report, "I advised [the victim] that I [Detective] did believe her about the sexual assault but also believed that there was further information she may not be sharing with me." In another case, the law enforcement officer described suspicious about the truthfulness of the victim's statement due to, "deceptive non-verbal behavior" and specifically cited the following examples: lack of eye contact during questioning and closed body. In the same case, the victim transcript reveals the detective at one point asked, "I'd like for you to tell me what really happened." A third example includes a case where the prosecutor declined to file charges. In the declination letter which was included in the case file the prosecutor stated,

> "The central issue is the credibility between the suspect and [victim]. [The victim claimed] a previous sexual assault occurring and continuing to live with the suspect subsequently calls into question her credibility."

Among the entire sample of cases, 24.5% involved a criminal justice system actor expressing a victim credibility concern (n = 115).

To answer Research Question 2, ***law enforcement case referral*** refers to when the detective assigned to the sexual assault case refers the case to the prosecutor for charging considerations (0 = Not referred, 1 = Referred). Despite some research using the police's decision to arrest a suspect as a measure of case attrition (Lapsey et al., 2022, 2023), in the current jurisdiction, the arrest decision is inextricably intertwined with prosecutorial input and, therefore, is not an accurate measure of decision-making exclusive to law enforcement (see also Spohn & Tellis, 2012). In the present jurisdiction, an arrest may take place either before or after the case is referred to the prosecutor. For example, law enforcement may make an initial arrest, but the suspect is later released because the prosecutor reviewed the case and declined to file charges. The reverse is also true: an arrest may only be made after a case was referred to the prosecutor and charges were filed. However, the prosecutor only considered cases that were referred to them by law enforcement. As a result, case referrals by law enforcement were the most objective, reliable police decision to measure in the current jurisdiction. The nonlinear nature of the arrest-to-charges process is well-documented in other jurisdictions (Holleran et al., 2010; Spohn & Tellis, 2012, 2019). It is worth acknowledging that a suspect had to be identified in order for the case to be eligible for case referral (n = 368; 78.5%). Of the entire sample, 56.9% of cases were referred by law enforcement which represents 72.6% of cases with an identified suspect (n = 267).

To answer Research Question 3, ***charges filed*** was measured based on whether the prosecutor filed any charges against at least one suspect in relation to the sexual assault report (0 = Not Charged, 1 = Charged). Among cases referred to the prosecutor by law enforcement (n = 267), the prosecutor filed charges in 81 cases (30.34%).

To answer Research Question 4, ***case conviction*** was measured dichotomously based on whether the defendant pled guilty to any charges in relation to the sexual assault report (0 = Dismissed/In-progress, 1 = Convicted). All cases with a conviction were done so via plea agreement. One case is still considered "in progress" because charges have been filed, but the suspect as neither agreed to a plea agreement nor has there been a trial.[15] Of the cases with charges filed (n = 81), 62 have resulted in a conviction (76.54%).

Table 3.5. Univariate Statistics for Study Outcomes (N = 469)

Variable	N	%
Victim credibility concerns	115	24.5
Suspect was identified	368	78.5
Law enforcement case referral	267	56.9 (72.6)[1]
Prosecutor filed charges	81	17.3 (30.3)
Case convicted	62	13.2 (76.5)[2]

Notes. 1. Conditional percentages presented. 2. One case has charges filed but disposition is pending.

Key Independent Variable: Victim Self-Protective Behaviors

As previously illustrated in Table 3.2, the key independent variable of interest, *victim self-protective behaviors*, was initially captured as 14 non-exclusive dichotomous measures, each representing a specific behavior(s), in addition to an "Other" category to capture behaviors not listed. As illustrated in Table 3.6, 64.6% of cases had a victim report engaging in at least one self-protective behavior. By far, the most common behaviors victims reported engaging in are ARGUE (44.1%) and STRUGGLE (34.4%). This is unsurprising because these were defined broadly. For instance, if the victim stated at any point during the sexual assault that they wanted the perpetrator to stop would have

[15] The suspect in this case is currently serving a prison sentence for a different sexual assault in another State. Consequently, the prosecutor has decided to pursue these charges after the suspect's sentence is served. This may have been done to ensure the sentence is served consecutively.

constituted ARGUE. In a similar vein, STRUGGLE would have constituted the most minor of physical actions such as pushing the offender away. In contrast, behaviors such as CALLPOL would have required the overt action of attempting to gain the attention of a person of authority.

Table 3.6. Univariate statistics for 14 Individual Victim Self-Protective Behaviors

Name	**N**	**%**
1. ARGUE	207	44.1
2. STRUGGLE	166	34.4
3. COPRSTALL	91	19.4
4. SCAREOFF or SCREAM	64	13.6
5. NOWEPATK	51	10.9
6. RANHIDE	45	9.6
7. GETHELP	39	8.3
8. CALLPOL	15	3.2
9. NOGUNTHR	3	0.6
10. NOWEPTHR	2	0.4
11. GUNATACK	0	0
12. GUNTHRET	0	0
13. NOGUNATK	0	0
14. CHASHELD	0	0
15. OTHER	0	0
At least one self-protective behavior reported	303	64.6
No self-protective behaviors reported	166	35.4

Notes. 1. Variables with zero frequencies will not be referred to again.

The small cell sizes on several individual self-protective behaviors necessitated a different measurement strategy of the key independent variable of interest. Given the explanatory nature of the current study, I tested nine different operationalizations of VSPBs which ranged from measures that were dichotomous, unordered categorical, ordinal, and composite scores (for full list, see Appendix B).[16] Ultimately, two

[16] Preliminary univariate, bivariate, and multivariable analyses were conducted to assess each version of the independent variable. Final measurement decisions were based on many considerations such as cell count issues, overall model fit statistics (e.g., Nagelkerke R^2, AIC), and existing theoretical frameworks.

measurement strategies, using three composite scores, are presented in forthcoming analyses. Table 3.7 presents the means and standard deviations for each composite score.

Measurement strategy 1 was to create a composite score of the total number of SP behaviors a victim reported to have engaged in. Then, Measurement strategy 2 involved creating composite scores for the total *physical* and total *verbal* SP behaviors the victim reported.[17] The operational definitions for these scores were based on how these behaviors have been collapsed in the prior literature (see e.g., Clay-Warner, 2002; Guerette & Santana, 2010; Pinciotti & Seligowski, 2021; Powers, 2014, 2015; Powers & Bleeker, 2023; Powers & Simpson, 2012; Santana, 2005; Tark & Kleck, 2004, 2014). In doing so, the total reported *physical* SP behaviors were the sum of NOWEPATK, RANHIDE , and STRUGGLE. Total reported *verbal* SP behaviors were the sum of NOGUNTHR, NOWEPTHR, SCAREOFF or SCREAM, GETHELP, CALLPOL, ARGUE, and COPRSTALL.

Table 3.7. Univariate statistics for Independent Variables

Variable	***M***	***SD***	***Min-Max***
Measurement strategy 1			
Total number of ***all*** SP behaviors	1.46	1.49	0-7
Measurement strategy 2			
Total number of ***verbal*** SP behaviors	0.90	0.98	0-5
Total number of ***physical*** SP behaviors	0.56	0.76	0-3

Control Variables

Though it is important to note the current study does not provide a direct test of the focal concerns perspective, the control measures are informed by prior theoretical and

[17] Two composite scores comparing the total forceful and nonforceful SP behaviors reported but were non-significant for 3 of 4 outcomes (i.e., prosecutorial charges, see Appendix C).

empirical evidence as to the victim, suspect, and case characteristics associated with the current study's outcome measures (Lapsey et al., 2022, 2023; Spohn, 2017). Control measures are presented as legal or extralegal characteristics. Table 3.8 includes univariate statistics for all study control measures.

Table 3.8. Univariate statistics for control variables

Variable	**N**	**%**
Legal factors		
At least one identified witness	316	67.4
Perpetrator used/threatened a weapon/force	246	52.5
Victim injury	169	36.0
Victim became unconscious	171	36.5
Victim participation	292	62.3
Suspect confessed	31	6.6
Extralegal factors		
Location of incident		
Public	76	16.2
Private/Semiprivate locations	393	83.8
Victim-perpetrator relationship		
Stranger	89	19.0
Other Known Person	270	57.6
Romantic Partner (current/former)	110	23.5
Victim mental health/disability condition	106	22.6
Victim substance use		
No	211	45.0
Voluntary use	215	45.8
Involuntary use	43	9.2
Victim was a minor	132	28.1
Victim race		
White	412	87.9
Black/African American	28	6.0
Other	29	6.2
Suspect was a minor	55	11.7
Suspect race		
White	375	80.0
Black/African American	60	12.8
Other	34	7.2

Legal Characteristics. Several case variables were included as measures of legally relevant case characteristics. As previously defined, legal characteristics are concerned with explicit laws, statutes, and regulations. In this regard, ***victim injury*** was measured based on whether the victim sustained physical injuries beyond the sexual assault (e.g., cuts, bruising, broken bones) (0 = No; 1 = Yes). This measure is routinely included in studies of sexual assault case attrition and is theorized to influence perceptions of perpetrator blameworthiness or dangerousness (Alderden & Ullman 2012; Fansher & Welsh, 2023; O'Neal et al. 2015; Spohn et al., 2001). As illustrated in Table 3.1, 36.0% of cases involved a victim that sustained physical injuries (e.g., vaginal tearing, bruising, cuts).

Though the literature has conceptualized the perpetrator using force or a weapon as both a measure of suspect blameworthiness and community protection, it is decidedly a legal characteristic (Lapsey et al. 2022). In this regard, the perpetrator using or threatening to use **a weapon or force** against a victim is dichotomously measured (0 = No; 1 = Yes). In particular, research has shown this to influence charging decisions as it is often considered an "aggravating factor" in state sexual assault statutes, such as Minnesota (Beichner & Spohn 2005; Lapsey et al. 2022; Spohn & Holleran 2001). For example, the perpetrator using a weapon is one of the elements that distinguishes between criminal sexual conduct in the first versus second degree (§ 609.342- 609.343). Since the perpetrator using a weapon was rare (n = 23), a combined measure was developed which collapses whether the suspect used or threatened to use force or a weapon against the victim. This was done given the conceptual similarities between using a weapon and using force. For instance, there is evidence to suggest that case attrition is less likely

when the perpetrator physically assaulted the victim in addition to the sexual assault (i.e., force) (O'Neal & Spohn, 2017). In 52.5% of cases, the victim alleged the perpetrator used/threatened to use force/a weapon.

Several legal characteristics overlap with practical constraints (Lapsey et al., 2023; O'Neal & Spohn, 2017; Steffensmeier et al., 1998, 2017). First, whether any ***witnesses were identified*** (0 = No; 1 = Yes) was defined as there being at least one witness interviewed by the police (67.4%). This was included because the nature of sexual assault perpetration means it is rare to have witnesses. Therefore, witnesses may provide corroborating accounts beyond the "he said she said" nature of most sexual assault cases (Spohn & Tellis, 2014). In the current study, witnesses were defined as having any information regarding the sexual assault incident; they did not have to be a direct witness to the sexual assault itself. Second, whether the ***suspect confessed*** (0 = No; 1 = Yes) was measured because a confession streamlines the decision-making process for the police and prosecutor (i.e., reduces uncertainty; Steffensmeier et al., 1998). The suspect confessed in only 6.6% of cases included in the current study.

Third, whether the victim became ***unconscious*** at any time during the incident was coded (0 = No; 1 = Yes). If the victim reported becoming unconscious at any point during the incident (including the entire incident), then it was coded as "Yes" (36.5%). Though little research has examined the victim's state of consciousness as a predictor of case attrition, the victim being unconscious of any part of the incident deeply impacts the details they can provide (Busch-Amendariz et al., 2010). Further, during the MN SAKI a trend was found where prosecutors often used this as a reason for declining to file charges

because the victim was unable to provide a "complete" account of the incident due to their unconsciousness.

Lastly, whether the ***victim participated*** in the investigation referred to whether the victim was willing to engage with law enforcement and/or prosecutors throughout the investigation (0 = No; 1 = Yes). Since all sample cases are considered officially reported, victim participation is measured based on whether they continued to participate with the investigation post-report, which occurred in 62.3% of cases in the current study. In many cases the victim was never directly asked if they would be willing to participate in the investigation. Therefore, signs the victim was engaging in the investigation were used to substantiate participation (e.g., providing multiple statements to the police, returning calls, sending screenshots). As previously discussed, victim participation (often referred to as victim cooperation) is one of the most studied and strongest predictors of sexual assault case attrition (Beichner & Spohn 2005; Lapsey et al., 2023; O'Neal et al. 2015; Pattavina et al. 2021; Spohn et al., 2014; Richards et al., 2019; Kaiser et al., 2017; Morabito et al., 2016).

Extralegal Characteristics. Several measures of extralegal characteristics which refer to elements that are beyond legal concern (Spohn et al., 2001). First, the victim and perpetrator's ***race*** (0 = White/Caucasian, 1 = Black/African American, 2 = Other[18]) and ***minor status*** at the time of the incident (0 = less than 18 years-old, 1 = 18 years-old or older) was examined. Prior literature supports those extralegal factors as influential on sexual assault case attrition (Lapsey et al., 2023; Spohn & Holleran, 2001; Spohn et al., 2001). However, recent meta-analytic findings suggest that victim and suspect

[18] "Other" category aggregates American Indian/Alaskan Native, Asian/Pacific Islander, and Hispanic.

race/ethnicity have a marginal influence on case attrition compared to other legal factors (e.g., victim participation) (Lapsey et al., 2022, 2023). In the current study, minors were 28.1% of the victims and 11.7% of suspects. Additionally, most victims identified as White (87.9%); followed by Black/African American (6.0%) and Other (6.2%). Similarly, most suspects identified as White (80.0%); followed by Black/African American (12.8%) and Other (7.2%). Due to small cell frequencies (< 5) victim race is collapsed dichotomously in all multivariate analyses (0 = White/Caucasian, 1 = non-White).

Next, the ***location of the incident*** is operationalized dichotomously (0 = public, 1 = private/semiprivate locations). Private and semiprivate locations included: the private residences of the victim, suspect(s), or any third parties (e.g., friends), places in public spaces that may afford some level of privacy such as restaurants, laundromats, stores (see Richards et al., 2019). In 83.8% of cases, the incident occurred in a private or semiprivate location. Any other location was considered public, which occurred in 16.2% of cases. The incident location has been postulated to influence case attrition by causing subtle biases on perceived victim credibility (Fansher & McCarns, 2019). For example, a sexual assault incident occurring in public aligns with stereotypical notions of "real rape" and "ideal victims" which increases the victim's perceived credibility (Christie, 1986). In contrast, if the incident occurs at a private residence, such as a party, then the victim may be perceived as less credible or the incident as less serious (Fansher & McCarns, 2019).

The ***victim-perpetrator relationship*** was collected using the victim's accounts of the perpetrator (0 = Stranger (reference); 1 = Other known person; 2 = Romantic partner (current/former)). In this regard, most cases involved a perpetrator who was an "Other known" person to the victim (57.6%); followed by current/former romantic partners

(23.5%) and strangers (19.0%). Due to the rarity of a victim alleging multiple perpetrators (N=54; 11.2%), only the first/primary perpetrator's relationship to the victim is used. Prior research has found that the victim-perpetrator relationship is strongly associated with case attrition (Alderen & Ullman, 2012; Beichner & Spohn, 2012; Lapsey et al., 2023; Pattavina et al. 2021; Spohn et al., 2001; Spohn & Holleran 2001; Taylor 2022), but its hypothesized relationship is debated. For example, studies have found that cases with known perpetrators will progress further in the criminal justice system (Spohn et al., 2001). This finding would indicate practical constraints: a known perpetrator is more likely to result in an identified suspect compared to a stranger perpetrator. However, more evidence suggests that when the perpetrator is a stranger, those cases receive more thorough police investigations and, subsequently, are less likely to have resulted in case attrition (Beichner & Spohn, 2012; McCahill et al. 1979; Spohn & Holleran 2001; Taylor 2022). The hypothesized rationale for this finding was that stranger sexual assaults are more consistent with the stereotypical "real rape" image and, therefore, are deemed as more serious than cases involving perpetrators with a known relationship to the victim. Further evidence for this interpretation stems from prior work demonstrating that characteristics such as victim moral character has a stronger influence on prosecutorial charging decisions when the victim and perpetrator were prior/current intimate partners (Spohn & Holleran, 2001).

In addition to being a dependent measure for RQ1, ***victim credibility concerns*** are included as a control variable for case attrition analyses. Given the fact that victim credibility is measured based on overt written statements made by criminal justice system actors, two additional measures are included which are intended to capture proxy

measures which may impact how victims are perceived by CJS actors (Jordan, 2004; Morabito et al., 2016; O'Neal, 2019; Rogers et al., 2009). First, 22.6% of cases involved a victim with a ***self-reported mental health or disability condition*** at the time of the incident (0 = No, 1 = Yes). In the even the victim was a vulnerable adult, the victim's legal caregiver informed law enforcement of the preexisting conditions.

Second, the ***victim's substance use*** refers to the victim admitting to consuming alcohol or drugs prior to the incident (0 = No (reference), 1 = Yes, voluntary, 2 = Yes, involuntary). In this regard, 45.0% used no substances, 45.8% used substances voluntarily, and 9.2% reported involuntarily being forced to ingest substances. Previous research consistently shows that the victim's voluntary substance uses increases case attrition (Beichner & Spohn, 2005; McCahill et al., 1979; Spears & Spohn, 1997; Spohn & Holleran, 2001; Spohn & Horney, 1992; Spears & Spohn, 1996; Spohn & Tellis, 2014, 2019). This relationship is postulated to have an influence because such behaviors have a negative effect on a criminal justice actor's perceptions of the victim's moral character, risk-taking culpability, and/or credibility (Beichner & Spohn, 2005; McCahill et al., 1979; Spears & Spohn, 1997; Spohn & Holleran, 2001; Spohn & Horney, 1992; Spears & Spohn, 1996; Spohn & Tellis, 2014, 2019). Historically, such characteristics tied to the victim's moral character or behavior preceding the incident are labeled extralegal characteristics (Beichner & Spohn, 2012; Frohmann, 1997; LaFree, 1989). Additionally, Fansher and Welsh (2023) used a sample of sexual assault cases and found a decreased likelihood of charges in cases involving suspected "date rape" (i.e., involuntary drug use). Therefore, the current study distinguishes between victims admitting to voluntarily using

substances versus victims alleging they were involuntarily led to consume these substances.

Missing Data

As often observed with administrative data, some case information was missing or unknown (Palusci et al., 2005). Regarding the key independent measures, there were six cases (1.3%) where victim self-protective behaviors was missing from the case file. Regarding control measures, five variables had 0-<5% missing data; one variable had 5-<10% missing data, two variables had 10-13% missing data. More specifically, victim participation was missing in 9.4% of cases. Lastly, the two variables with the highest percentage of missing data were victim race (10.1%) and suspect race (12.6%). Univariate statistics for missing data and variable frequencies before imputation are presented in Appendix D. Since strategies such as listwise deletion introduces biases and limitations to the data, missing data was addressed using random forest imputation (Shah et al., 2014; Stekhoven & Bühlmann, 2012).

The main distinction between random forest imputation and multiple imputation is that the latter generates multiple iterations of a database with missing values and pools estimates from analyses conducted on each iteration (Shah et al., 2014; Stekhoven & Bühlmann, 2012). In contrast, random forest imputation creates a single complete database in which all missing values are imputed based on the values of all other variables. More specifically, random forest imputation, "is an extension of classification and regression trees…predictive models that recursively subdivided the data based on values of the predictor variables…" (Shah et al., 2014, p. 765). Studies have compared using random forest imputation versus multiple imputation and found the former to

outperform the latter (Shah et al., 2014; Stekhoven & Bühlmann, 2012). Further, random forest imputation was appropriate in this context because it is a non-parametric method in which mix variable types (e.g., continuous, categorical) can be imputed simultaneously (Stekhoven & Buehlmann, 2012). Random forest imputations were conducted in R using documentation from Dr. Alex Kigerl, a Research Associate of the School of Criminology and Criminal Justice, utilizing the *missForest* package (Stekhoven & Buehlmann, 2012).

Analytical Strategy

The analytical strategy involved several steps. First, analyses begin with univariate statistics for all study variables. Second, univariate statistics and bivariate analyses are presented for each study outcome. Bivariate analyses included the chi-square ($\chi 2$) test of independence for all categorical explanatory variables and independent samples t-tests for VSPB composite scores (Agresti, 2002). For variables containing more than two categories, standardized residuals were computed to examine which categories had the greatest influence on the bivariate association. Reported standardized residuals were at least the absolute value of 2.0 (Sharpe, 2015). Given the small sample size of cases charged (n = 81), only univariate statistics and bivariate analyses are presented.

Third, for analyses related to RQs 1-3, I estimated a series of nested binary logistic regression models to examine the independent effects of explanatory variables on each outcome (Hosmer et al., 2023; Menard, 2010; Waner, 2021). Each study outcome was examined using two separate binary logistic regression models. Each model contained “Model 1” which includes all appropriate control measures. The first binary logistic regression model will have a subsequent nested block labeled Model 2a. Model

2a includes all appropriate control measures with the addition of the total frequency of all self-protective behaviors reported by the victim. The second binary logistic regression model will have a subsequent nested block labeled Model 2b. Model 2b includes all appropriate control measures with the addition of the (1) total frequency of *physical* victim self-protective behaviors (VSPBs), and (2) total frequency of *verbal* VSPBs. Findings from the binary logistic regression analyses are presented using unstandardized coefficients, standard errors, odds ratios, and 95% confidence intervals for the odds ratios. An odds ratio (OR) measures the relative odds of an outcome given an explanatory variable, net all other variables (Agresti, 2012; Hosmer et al., 2023). An OR above 1.0 indicates increased odds of an outcome, whereas an OR below 1.0 indicates decreased odds of an outcome (Agresti, 2012; Nagelkerke et al., 2016). Overall model fit was assessed using the X^2(df), Alpha, and Nagelkerke R2. For all analyses, Alpha is set at $p < .05$. All analyses were conducted using SPSS version 29 and R.

Fourth, I established the appropriate sub-samples of cases for each study outcome and corresponding research question (see Figure 1.1). To answer RQ1, victim credibility concerns were assessed for all cases in the current study ($N = 469$). To answer RQ2, a subsample of cases with an identified suspect was used for analyses on law enforcement case referrals ($n = 380$). This subsample is necessary because it would be impossible for law enforcement to refer to a case without an identified suspect. Then, in this study's jurisdiction, prosecutors only considered cases for charges when it had been referred to them by law enforcement. Accordingly, to answer RQ3, analyses were constrained to cases referred by law enforcement ($n = 274$). To answer RQ4, conviction analyses were constrained only to cases where the prosecutor filed charges ($n = 81$). Post hoc power

analyses were conducted using *G*Power* to ensure all models revealed a minimum power of 0.95, indicating the sample size and current explanatory variables sufficiently detect meaningful effects in the logistic regression models (Faul et al., 2007; Faul et al., 2009).

Fifth, and lastly, all models underwent relevant diagnostic analyses to identify potential issues with the validity of these analyses (Agresti, 2012; Hosmer et al., 2013; Field, 2012). In particular, multicollinearity issues were ruled out because all variables exhibited a Variance Inflation Factor (VIF) above 10 and a tolerance statistics above 0.2 (Field, 2012; Franke, 2010). Additionally, I assessed analyses for outlier cases which may exert undue influence on estimated models. Outliers were assessed using a test for Cook's Distance which revealed no values above 1.0, indicating that outliers did not exert undue influence on any of the presented models (Field, 2012; Haberman, 1973). Supplementary diagnostics for outliers include examining Dfbeta's, standardized residuals, and leverage values (Field, 2012; Haberman, 1973).

Chapter 4 RESULTS

This chapter presents study findings, starting with univariate statistics, followed by bivariate analyses, and concluding with binary logistic regression analyses. With exception to the independent variables, nonsignificant findings are not interpreted.

Univariate Statistics: All Cases

Previously shown in Table 3.5, Table 3.7 and Table 3.8 are all univariate statistics for all explanatory variables. Among cases included in this study ($N = 469$), 24.5% of cases were associated with victim credibility concerns ($n = 115$). Of the 368 cases where a suspect was identified, law enforcement referred to the prosecutor in 72.6% of cases ($n = 267$). Among cases referred, 30.3% of cases were charged ($n = 81$). Of cases with charges, 76.5% resulted in a conviction (all by plea) ($n = 62$).

For this study's independent variables, victims reported engaging in 1.46 self-protective behaviors ($SD = 1.49$), ranging from 0-7. Regarding the two composite scores for the overall frequency of verbal SPBs and the overall frequency of physical SPBs. Regarding verbal SPBs, victims, on average, engaged in 0.90 *verbal* SP behaviors ($SD = 0.98$), which ranged from 0-5. Then, victims reported engaging in, on average, 0.56 *physical* SP behaviors ($SD = 0.76$), ranging from 0-3.

In terms of legally relevant control measures, 67.4% of cases had at least one identified witness; 52.5% of cases had a perpetrator that reportedly used/threatened to use a weapon/force; 36.0% of victims sustained injuries; 36.5% of victims were unconscious for part or all of the incident; and 62.3% of victims participated in the investigation. Incident locations were more frequent in private or semiprivate locations (83.8%) than in public settings (16.2%). In most cases, the victim and perpetrator were non-strangers:

57.6% were “Other” known persons and 23.5% were current or former romantic partners. Cases involving strangers were the least common (19.0%).

In terms of extralegal control measures, in 22.6% of cases, victims had a mental health/disability condition. Regarding substance use, there were similar rates for no use (45.0%) as voluntary use (45.8%); however, 9.2% of victims reported forced ingestion of alcohol or drugs or suspected drink tampering by the perpetrator. Regarding demographic characteristics, most victims identified as White (87.9%); followed by African American (6.0%) and Other (6.2%). Similarly, most suspects identified as White (80.0%); followed by African American (12.8%) and Other (7.2%). While victims were minors at the time of the incident in 28.1% of cases, suspects were minors in only 11.7% of cases.

Univariate Statistics and Bivariate Analyses by Research Question

Research Question 1: Victim Credibility Concerns

Table 4.1 presents univariate statistics and bivariate analyses comparing cases where a CJS actor expressed concerns with the victim’s credibility and cases with no victim credibility concerns were identified.

Starting with legal characteristics, cases where the perpetrator used/threatened force/a weapon comprised 61.74% of cases with victim credibility concerns and 49.40% of cases with none. Bivariate analyses found a significant difference cases where the perpetrator used/threatened force/a weapon was more common in cases with victim credibility concerns ($\chi2 = 5.27$, $p = 0.02$). Further, significant, bivariate differences were found between the victim-perpetrator relationship and whether there were victim credibility concerns ($\chi2 = 9.37$, $p = .01$): more cases with victim credibility concerns had a perpetrator who was a stranger to the victim ($z = 2.4$) than expected by chance.

Strangers were present in 28.70% of cases with victim credibility concerns, compared to only 15.82% in cases with no concerns.

Regarding extralegal characteristics, cases with credibility concerns involved a victim with a mental health/disability condition in 35.65% of cases, while comprising only 18.63% of cases with no concerns; which was a significant at the bivariate level ($\chi 2 = 14.84$, $p < .001$). In both groups, most victims identified as White: 94.78% of cases with credibility concerns and 85.59% of cases with no concerns; standardized residuals do not indicate a specific racial identity exerting greater influence on this effect ($\chi 2 = 7.21$, $p = .03$).

None of the study's independent measures were significant at the bivariate level.

Table 4.1. Descriptive and Bivariate Comparisons for Victim Credibility Outcome

Variable	Credibility Concerns (*n* = 115)		No Concerns (*n* = 354)		t/x^2	*p*
	N/M	%/SD	N/M	%/SD		
Legal factors						
At least one identified witness	80	69.57	236	66.67	0.33	.57
Perpetrator used/threatened a weapon/force	71	61.74	175	49.4	5.27	.02
Victim injury	42	36.52	127	35.88	0.02	.90
Victim became unconscious	35	30.43	136	38.42	2.39	.12
Victim participation	74	64.35	218	61.58	0.28	.60
Extralegal factors						
Location of incident					0.16	.92
Public	20	17.39	56	15.82		
Private or semiprivate locations	95	82.61	298	84.18		
Victim-perpetrator relationship					9.37	.01
Stranger	33	28.70	56	15.82		
Other Known Person	58	50.43	212	59.89		
Romantic Partner (current/former)	24	20.87	86	24.29		
Victim mental health/disability condition	41	35.65	65	18.36	14.84	<.001
Victim substance use					2.36	.31
No	56	48.70	155	43.79		
Voluntary use	46	40.00	169	47.74		
Involuntary use	13	11.30	30	8.4		
Victim was a minor	31	26.96	101	28.53	0.11	.74
Victim race					7.21	.03
White	109	94.78	303	85.59		
Black/African American	2	1.74	26	7.34		
Other	4	3.48	25	7.06		
Total number of SP behaviors	1.54	1.43	1.43	1.51	-0.69	.49
Total number of *physical* SP behaviors	0.57	0.77	0.56	0.75	-0.11	.91
Total number of *verbal* SP behaviors	0.97	0.94	0.87	0.99	-0.97	.33

Notes.

Research Question 2: Law Enforcement Case Referral

Table 4.2 presents univariate statistics and bivariate comparisons between cases referred by law enforcement and cases that were not referred.

Starting with legal characteristics, 76.78% of referred cases had at least one identified witness, compared to 62.38% of cases without referrals which was significant at the bivariate level ($\chi2 = 7.68$, $p = .01$). Victim unconsciousness was less common in referred cases (32.21%) compared to cases not referred (43.56%) ($\chi2 = 4.14$, $p = 0.04$). In addition, far more cases resulted in a case referral when the victim participated, compared to when the victim did not (81.27% v. 29.70%, respectively)($\chi2 = 88.31$, $p < .001$). Considering only a single case had a suspect confession but no case referral, case referrals were significantly associated with a suspect confession (11.24%)($\chi2 = 9.97$, $p < .001$).[19]

One extralegal characteristic was significant at the bivariate level. In this regard, 33.71% of referred cases involved a victim who was a minor, compared to 21.78% of cases not referred ($\chi2 = 4.92$, $p = .03$).

Then, significant bivariate differences were found between the means of the total frequency of all self-protective behaviors reported by the victim ($t = -2.54$, $p = .01$) and the total frequency of physical VSPBs ($t = -2.40$, $p = .02$) among outcome groups. Notably, these means were larger among referred cases (M = 0.61 v. 0.45), suggesting a positive association between VSPBs and case referrals. In other words, higher frequencies of these behaviors are associated to case referment.

[19] Given the minimal cell count, a significant Fisher's Exact Test is presented, indicating a rejection of the null hypothesis, signifying a significant association between these variables. It is worth noting that there was not a violation of the minimum *expected* cell count.

Table 4.2. Bivariate comparisons for law enforcement case referral (n = 368)

Variable	Case referred (*n* = 267)		Case not referred (*n* = 101)		*t/x2*	*p*
	N/M	%/SD	N/M	%/SD		
At least one identified witness	205	76.78%	63	62.38%	7.68	.01
Perpetrator used/threatened a weapon/force	143	53.56%	48	47.52%	1.07	.30
Victim injury	90	33.71%	38	37.62%	0.77	.38
Victim became unconscious	86	32.21%	44	43.56%	4.14	.04
Victim participation	217	81.27%	30	29.70%	88.31	<.001
Suspect confessed[1]	30	11.24%	1	0.99%	9.97	<.001
Credibility	64	23.97%	21	20.79%	0.42	.52
Location of incident					0.73	.70
Public	32	11.99%	12	11.88%		
Private or semiprivate locations	235	88.01%	89	88.12%		
Victim-perpetrator relationship					4.72	.09
Stranger	20	7.49%	14	13.86%		
Other Known Person	163	61.05%	63	62.38%		
Romantic Partner (current/former)	84	31.46%	24	23.76%		
Victim mental health/disability condition	57	21.35%	27	26.73%	1.21	.27
Victim substance use					2.65	.27
No	133	49.81%	41	40.59%		
Voluntary use	111	41.57%	51	50.50%		
Involuntary use	23	8.61%	9	8.91%		
Victim was a minor	90	33.71%	22	21.78%	4.92	.03
Victim race					0.77	.68
White	233	87.27%	91	90.10%		
Black/African American	14	5.24%	5	4.95%		
Other	20	7.49%	5	4.95%		
Suspect was a minor	43	16.10%	12	11.88%	1.03	.31
Suspect race					3.06	.22
White	195	73.03%	79	78.22%		
Black/African American	43	16.10%	17	16.83%		
Other	29	10.86%	5	4.95%		
Total number of SP behaviors	1.63	1.47	1.20	1.46	-2.54	.01
Total number of *physical* SP behaviors	0.61	0.74	0.45	0.73	-2.40	.02
Total number of *verbal* SP behaviors	1.02	0.97	0.75	0.93	-1.92	.06

Notes. 1. The provided p-value stems from Fisher's exact test (2-sided).

Research Question 3: Charges Filed

Table 4.3 presents univariate statistics and bivariate analyses comparing cases based on whether the prosecutor filed charges. Regarding legal characteristics, far more cases with a suspect confession (28.40% v. 3.76%) were charged compared to when there was no confession ($\chi 2 = 34.33$, $p < .001$).

In terms of extralegal characteristics, far fewer cases with victim credibility concerns resulted in charges (7.41%), compared to cases not charged (31.81%) ($\chi 2 = 17.50$, $p = <.001$). Likewise, fewer charged cases involved a victim with a mental health/disability condition (12.35% versus 25.27%, respectively)($\chi 2 = 5.61$, p = .02). In addition, significant bivariate differences were found between the victim's substance use and charges ($\chi 2 = 17.78$, $p = < .001$): more charged cases had a victim that did not engage in any substance use ($z = 2.5$) and fewer charged cases had a victim that voluntarily used substances ($z = -2.0$). In nearly half of cases with a referral were charged by the prosecutor (49.38%) the victim was a minor, compared to the cases with an adult victim (26.88%) ($\chi 2 = 12.78$, $p = < .001$). A greater proportion of cases with a victim identifying as non-White were charged (20.99%) compared not charged (9.14%) ($\chi 2 = 7.13$, $p = .02$). None of the current study's independent measures were significant at the bivariate level ($p < .05$). However, the total number of VSPBs measure was approaching significance ($p = .05$).

Table 4.3. Bivariate comparisons for prosecutorial charges outcome (n = 267)

Variable	Charged (*n* = 81)		Not Charged (*n* = 186)		*t/x2*	*p*
	N/M	%/SD	N/M	%/SD		
At least one identified witness	67	82.72%	138	74.19%	2.30	0.13
Perpetrator used/threatened a weapon/force	40	49.38%	103	55.38%	0.81	0.37
Victim injury	30	37.04%	60	32.26%	0.58	0.45
Victim became unconscious	20	24.69%	66	35.48%	3.01	0.08
Victim participation	69	85.19%	148	79.57%	1.17	0.28
Suspect confessed	23	28.40%	7	3.76%	34.33	<.001
Victim credibility concerns	6	7.41%	58	31.18%	17.50	<.001
Location of incident					0.98	0.61
Public	8	9.88%	24	12.90%		
Private or semiprivate locations	73	90.12%	162	87.10%		
Victim-perpetrator relationship					0.91	0.64
Stranger	7	8.64%	13	6.99%		
Other Known Person	46	56.79%	117	62.90%		
Romantic Partner (current/former)	28	34.57%	56	30.11%		
Victim mental health/disability condition	10	12.35%	47	25.27%	5.61	0.02
Victim substance use					17.78	<.001
No	56	69.14%	77	41.40%		
Voluntary use	22	27.16%	89	47.85%		
Involuntary use	3	3.70%	20	10.75%		
Victim was a minor	40	49.38%	50	26.88%	12.78	<.001
Victim race[1]					7.13	0.02
White	64	79.01%	169	90.86%		
Non-White	17	20.99%	17	9.14%		
Suspect was a minor	16	19.75%	27	14.52%	1.15	0.28
Suspect race					2.60	0.27
White	54	66.67%	141	75.81%		
Black/African American	17	20.99%	26	13.98%		
Other	10	12.35%	19	10.22%		
Total number of SP behaviors[2]	1.83	1.66	1.55	1.37	-1.33	0.83
Total number of *physical* SP behaviors[2]	0.77	0.84	0.54	0.68	-2.10	0.84
Total number of *verbal* SP behaviors[2]	1.06	1.05	1.01	0.94	-0.42	0.05

Notes. 1. The provided p-value stems from Fisher's exact test (2-sided). 2. Since Levene's Test was significant, provided *p*-value is from the Mann-Whitney Test.

Research Question 4: Case Conviction

Table 4.4. presents univariate statistics and bivariate analyses comparing cases that did and did not result in a conviction. A preliminary binary logistic regression model was estimated with measures with cell counts above five; results are presented in Appendix H.

No legal characteristics were associated with case conviction at the bivariate level; however, five extralegal characteristics exhibited significant bivariate differences. In this regard, the victim-perpetrator relationship had a significant, bivariate relationship with case conviction ($\chi 2 = 4.84$, $p = .049$). In particular, in 95.16% of convicted cases the victim and suspect were non-strangers and 4.84% were strangers. In cases not convicted about a fifth involved strangers (21.05%). Cases involving a victim who was a minor was more common in convicted cases (58.06%) than compared to cases not convicted (21.05%)($\chi 2 = 7.97$, $p = .01$). Of convicted cases, 75.81% of suspects identified as White which was far greater than the 36.84% of not convicted cases with a suspect identifying as White ($\chi 2 = 9.94$, $p = .002$).

Regarding VSPBs, significant bivariate differences were found between the means of the total frequency of all self-protective behaviors reported by the victim ($t = 2.49$, $p = .02$) and the total frequency of verbal VSPBs ($t = 2.26$, $p = .03$) among outcome groups. Notably, these means were lower among convicted cases, compared to cases without convictions, indicating that these VSPBs are negatively associated with conviction.

Table 4.4. Bivariate comparisons for case convictions (n = 81)

Variable	Convicted (*n* = 62)		Not Convicted (*n* =19)		*t/x2*	*p*
	N/M	%/SD	N/M	%/SD		
At least one identified witness[1]	53	85.48%	14	73.68%	1.42	.30
Perpetrator used/threatened a weapon/force	27	43.55%	13	68.42%	3.60	.06
Victim injury	20	32.26%	10	52.63%	2.59	.11
Victim became unconscious[1]	16	25.81%	4	21.05%	0.18	.77
Victim participation[1]	55	88.71%	14	73.68%	2.60	.14
Suspect confessed	20	32.26%	3	15.79%	1.94	.16
Victim credibility concerns	3	4.84%	3	15.79%	2.54	.11
Location of incident[1]					0.98	.38
Public	5	8.06%	3	15.79%		
Private/Semi-private location	57	91.94%	16	84.21%		
Victim-perpetrator relationship[1]					4.84	.049
Stranger	3	4.84%	4	21.05%		
Non-strangers	59	95.16%	15	78.95%		
Victim mental health/disability condition[1]	9	14.52%	1	5.26%	1.15	.44
Victim substance use[2]					0.42	.52
No	44	70.97%	12	63.16%		
Any use	18	29.03%	7	36.84%		
Victim was a minor	36	58.06%	4	21.05%	7.97	.01
Victim race[1]					0.42	.53
White	50	80.65%	14	73.68%		
Non-White	12	19.35%	5	26.32%		
Suspect was a minor[1]	13	20.97%	3	15.79%	0.25	.75
Suspect race[1]					9.94	.002
White	47	75.81%	7	36.84%		
Non-White	15	24.19%	12	63.16%		
Total number of SP behaviors	1.56	1.54	2.68	1.77	2.49	.02
Total number of *physical* SP behaviors[3]	0.65	0.7	1.16	1.12	2.39	.08
Total number of *verbal* SP behaviors	0.92	1.03	1.53	1.02	2.26	.03

Notes. 1. Minimum expected cell count violations existed, even after maximizing consolidation. Provided p-values are from the Fisher's exact test. 2. The collapsed measure is presented in order to fix violations in the expected minimum cell count. 3. Since Levene's Test was significant, provided p-value is from the Mann-Whitney Test.

Multivariate Analyses: Nested Binary Logistic Regression Models

Research Question 1: Victim Credibility Concerns

To answer RQ1, two nested binary logistic regression models are estimated. First, Table 4.5 presents a nested binary logistic regression model estimating the independent effects of the overall frequency of victim self-protective behaviors, on whether CJS actors had victim credibility concerns, net relevant control variables. Second, Table 4.6 presents a nested binary logistic regression model estimating the independent effects of two composite scores—overall frequency of *verbal* victim self-protective behaviors and overall frequency of *physical* victim self-protective behaviors—on victim credibility concerns, net relevant control variables.

Model 1 estimates the independent effects of all control variables on the outcome. In terms of victim-perpetrator relationship, cases where the perpetrator was known to the victim was associated with an approximate 56% (i.e., Other known) to 60% (i.e., current/former romantic partner) reduction in the odds of victim credibility concerns, compared to when the perpetrator was a stranger ($p = .01$). In contrast, the odds of victim credibility concerns increased by more than two times when the victim also had a mental health/disability condition ($p < .001$). Lastly, when the victim identified as non-White, the odds of there being a victim credibility concern was reduced by 70% ($p = .01$).

Next, Model 2a includes victim self-protective behaviors as a composite score consisting of the total number of SP behaviors the victim engaged in. Substantive significant findings from the previous model were not altered by the new measure's inclusion. The relationship between the victim's race and the outcome remained unchanged. Further, in this model, in cases where the perpetrator is an 'Other known'

person to the victim, there was an approximate 57% reduction in the odds of there being credibility concerns ($p = .01$); and a similar 60% reduction occurred when the perpetrator was a stranger ($p = .01$). Case where the victim had a mental health/disability condition were still more than two times more likely have credibility concerns ($p < .001$). Victim self-protective behaviors were not significant in this model. That said, there was overall a good model fit ($x^2 = 115.90$, df = (16), $p < .001$).

In Model 2b, victim self-protective behaviors are included as two variables for the total number of *physical* v. *verbal* SP behaviors reported by the victim (see Table 4.6). The relationship between the victim's race and the outcome remained nearly identical to previous models: when the victim identified as non-White there was an associated 69% decrease in odds of credibility concerns ($p = .01$). Significant findings regarding the victim-perpetrator relationship, victim mental health/disability condition, and victim race remained identical to Model 2a. Victim self-protective behaviors were not significant in this model. That said, there was overall a good model fit ($x^2 = 116.11$, df = (17), $p < .001$).

Table 4.5. Binary Regression estimating the total number of SP behaviors (2a) and victim credibility outcome (N = 469)

Variables	Model 1						Model 2a					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	**p**
At least one identified witness	.35	.26	.85	2.36	1.42	.18	.35	.26	.85	2.37	1.42	.18
Perpetrator used/threatened a weapon/force	.50	.28	.94	2.86	1.64	.08	.55	.30	.95	3.15	1.73	.07
Victim injury	-.05	.24	.59	1.53	.95	.84	-.04	.24	.60	1.55	.96	.88
Victim became unconscious	-.08	.32	.49	1.73	.92	.80	-.10	.33	.48	1.71	.90	.76
Victim participation	.04	.25	.64	1.68	1.04	.89	.05	.25	.64	1.71	1.05	.85
Private/semiprivate incident location	.31	.34	.71	2.63	1.36	.36	.32	.34	.71	2.67	1.38	.34
Victim-perpetrator relationship	-	-	-	-	-	-	-	-	-	-	-	-
Stranger (ref)	-	-	-	-	-	.01	-	-	-	-	-	.01
Other Known Person	-.83	.30	.24	.79	.44	.01	-.83	.30	.24	.79	.43	.01
Romantic Partner (current/former)	-.93	.37	.19	.81	.40	.01	-.93	.37	.19	.81	.40	.01
Victim mental health/disability condition	.84	.25	1.43	3.78	2.33	<.001	.84	.25	1.42	3.76	2.31	<.001
Victim substance use	-	-	-	-	-	-	-	-	-	-	-	-
No (ref)	-	-	-	-	-	.35	-	-	-	-	-	-
Voluntary use	-.24	.28	.46	1.36	.79	.39	-.23	.28	.46	1.4	.79	.41
Involuntary use	.29	.44	.57	3.15	1.34	.50	.29	.44	.57	3.2	1.34	.50
Victim was a minor	-.06	.28	.55	1.62	.94	.83	-.07	.28	.54	1.61	.93	.80
Victim race is non-White[1]	-1.19	.47	.12	.76	.30	.01	-1.19	.47	.12	.76	.30	.01
Total number of SP behaviors	-	-	-	-	-	-	-.04	.09	.80	1.14	.96	.64
Constant	-1.23	.50	-	-	.29	.01	-1.20	.50	-	-	.30	.02
x^2(df)	38.84 (13) (p < .001)						39.06 (14) (p < .001)					
Nagelkerke R^2	.12						.12					

Notes. 1. Victim race collapsed due to cell count frequencies less than 5. 2. Comparison groups include strangers, No, and White.

Table 4.6. Binary Regression estimating the total number of physical and verbal SP behaviors (2b) and victim credibility outcome.

	Model 1						Model 2b					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***
At least one identified witness	.35	.26	.85	2.36	1.42	.18	.35	.26	.85	2.37	1.42	.18
Perpetrator used/threatened a weapon/force	.50	.28	.94	2.86	1.64	.08	.55	.30	.95	3.15	1.73	.07
Victim injury	-.05	.24	.59	1.53	.95	.84	-.04	.24	.60	1.55	.96	.88
Victim became unconscious	-.08	.32	.49	1.73	.92	.80	-.10	.33	.48	1.72	.91	.76
Victim participation	.04	.25	.64	1.68	1.04	.89	.05	.25	.64	1.71	1.05	.85
Private/semiprivate incident location	.31	.34	.71	2.63	1.36	.36	.32	.34	.71	2.67	1.37	.35
Victim-perpetrator relationship	-	-	-	-	-	-	-	-	-	-	-	-
Stranger (ref)	-	-	-	-	-	.01	-	-	-	-	-	.01
Other Known Person	-.83	.30	.24	.79	.44	.01	-.83	.30	.24	.79	.43	.01
Romantic Partner (current/former)	-.93	.37	.19	.81	.40	.01	-.93	.37	.19	.81	.40	.01
Victim mental health/disability condition	.84	.25	1.43	3.78	2.33	<.001	.84	.25	1.42	3.76	2.31	<.001
Victim substance use	-	-	-	-	-	-	-	-	-	-	-	-
No (ref)	-	-	-	-	-	.35	-	-	-	-	-	.37
Voluntary use	-.24	.28	.46	1.36	.79	.39	-.23	.28	.46	1.37	.79	.41
Involuntary use	.29	.44	.57	3.15	1.34	.50	.29	.44	.57	3.15	1.34	.51
Victim was a minor	-.06	.28	.55	1.62	.94	.83	-.07	.28	.54	1.61	.93	.80
Victim race is non-White[1]	-1.19	.47	.12	.76	.30	.01	-1.19	.47	.12	.76	.31	.01
Total number of *physical* SP behaviors	-	-	-	-	-	-	-.06	.17	.67	1.32	.94	.73
Total number of *verbal* SP behaviors	-	-	-	-	-	-	-.03	.14	.73	1.29	.97	.83
Constant	-1.23	.50	-	-	.29	.01	-1.20	.50	-	-	.30	.02
x^2(df)	38.84 (13) (p < .001)						39.07 (15) (p <.001)					
Nagelkerke R^2	.12						.12					

Notes. 1. Measures were collapsed due to small cell counts < 5: victim race (White).

Research Question 2: Law Enforcement Case Referral

To answer RQ2, two nested binary logistic regression models are estimated. First, Table 4.7 presents a nested binary logistic regression model estimating the independent effects of the overall frequency of victim self-protective behaviors, on law enforcement case referral, net relevant control variables. Second, Table 4.8 presents a nested binary logistic regression model estimating the independent effects of two composite scores—overall frequency of *verbal* victim self-protective behaviors and overall frequency of *physical* victim self-protective behaviors—on law enforcement case referral.

Model 1 shows that law enforcement case referral was significantly associated with victim participation (OR = 13.12, $p < .001$) and victim-perpetrator relationship ($p = .01$). More specifically, when compared to strangers, the perpetrator being an Other known person to the victim was associated with 3.18 times greater odds of case referment ($p = .02$) and current/former romantic partners led to 5.52 times greater odds ($p = .002$).

Model 2a shows that, compared to the prior model, victim participation ($p < .001$) and victim-perpetrator relationship ($p = .01$) retain significance and have similar odds ratios. In this model, victim participation is associated 13.19 greater odds of law enforcement case referral. When compared to strangers, the perpetrator being an "Other known" person to the victim was associated with 3.42 times greater odds of case referment ($p = .01$) and current/former romantic partners led to 5.65 times greater odds ($p = .002$). In this model, the victim being a minor becomes statistically significant while being associated with nearly three times greater odds of case referment ($p = .049$). Further, the total SP behaviors engaged in were significantly associated with law enforcement case referral ($p = .04$). Specifically, each additional behavior was associated

with an increase in the odds of case referment by 1.28 times. Lastly, the increase in the Nagelkerke R^2 from 38% to 39, in addition to the significant model fit statistics, suggests that the inclusion of these composite scores increased the overall model fit.

Model 2b finds that victim participation remains the strongest predictor of law enforcement case referrals, with 13.42 increased odds ($p < .001$). Similarly, compared to strangers, perpetrators who were "Other known" persons to the victim increased the odds of case referment by 3.38 times and 5.70 times in cases with current/former romantic partners ($p = .01$ and $p < .001$, respectively). When the victim was a minor, cases were 2.42 times more likely to be referred by law enforcement ($p = .049$). None of the independent scores were significant in this model. That said, the model fit statistics generally indicate an overall good model fit ($x^2 = 116.11$, df = 17, $p < .001$).

Table 4.7. Binary Regression estimating the total number of SP behaviors (2a) and law enforcement case referrals (n = 368)

	Model 1						Model 2a					
Variables	**B**	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**95% CI's**		**OR**	***p***
At least one identified witness	.41	.32	.79	2.84	1.50	.21	.37	.33	.76	2.74	1.44	.26
Perpetrator used/threatened a weapon/force	.35	.34	.73	2.75	1.42	.31	.09	.36	.54	2.23	1.09	.81
Victim injury	-.47	.31	.34	1.14	.63	.13	-.57	.31	.31	1.04	.56	.07
Victim became unconscious	-.57	.36	.28	1.15	.57	.11	-.44	.37	.31	1.34	.64	.24
Victim participation	2.57	.31	7.17	23.99	13.12	<.001	2.58	.31	7.16	24.29	13.19	<.001
Victim credibility concerns	.34	.36	.70	2.83	1.41	.34	.38	.36	.72	2.95	1.46	.30
Private/semiprivate incident location	.31	.45	.57	3.28	1.37	.48	.28	.45	.54	3.23	1.33	.54
Victim-perpetrator relationship	-	-	-	-	-	-	-	-	-	-	-	-
Stranger (ref)	-	-	-	-	-	.01	-	-	-	-	-	.01
Other Known Person	1.16	.49	1.22	8.30	3.18	.02	1.23	.49	1.31	8.95	3.42	.01
Romantic Partner (current/former)	1.71	.55	1.88	16.24	5.52	.002	1.73	.55	1.92	16.60	5.65	.002
Victim mental health/disability condition	-.13	.33	.46	1.67	.88	.69	-.07	.33	.48	1.79	.93	.83
Victim substance use – Any	.45	.35	.80	3.11	1.57	.19	.50	.35	.82	3.30	1.65	.16
Victim was a minor	.79	.44	.93	5.23	2.21	.07	.89	.45	1.01	5.84	2.42	.049
Victim race is non-White	.54	.51	.62	4.68	1.71	.30	.62	.53	.66	5.20	1.86	.24
Suspect is a minor	-.74	.54	.17	1.36	.48	.17	-.70	.54	.17	1.43	.50	.19
Suspect race is non-White	.45	.39	.73	3.36	1.57	.25	.35	.39	.66	3.08	1.42	.37
Total number of SP behaviors	-	-	-	-	-	-	.25	.12	1.01	1.63	1.28	.04
Constant	-2.60	.77	-	-	.07	<.001	-2.89	.79	-	-	.06	<.001
x^2(df)	111.51 (15) $p < .001$						115.90 (16) $p < .001$					
Nagelkerke R^2	.38						.39					

Notes. 1. Measures were collapsed due to cell counts; comparison groups include: No substance use; White. 2. Suspect confessed was removed from the analyses, as it was only present in one case that was not referred.

Table 4.8. Binary Regression estimating the total physical and verbal SP behaviors (2b) and law enforcement case referrals (n = 368)

Variables	Model 1						Model 2b					
	B	SE	95% CI's		OR	*p*	B	SE	LL	UL	OR	p
At least one identified witness	.41	.32	.79	2.84	1.50	.21	.36	.33	.76	2.74	1.44	.27
Perpetrator used/threatened a weapon/force	.35	.34	.73	2.75	1.42	.31	.07	.36	.53	2.20	1.08	.84
Victim injury	-.47	.31	.34	1.14	.63	.13	-.57	.31	.31	1.04	.56	.07
Victim became unconscious	-.57	.36	.28	1.15	.57	.11	-.46	.38	.30	1.32	.63	.22
Victim participation	2.57	.31	7.17	23.99	13.12	<.001	2.60	.32	7.24	24.88	13.42	<.001
Victim credibility concerns	.34	.36	.70	2.83	1.41	.34	.37	.36	.72	2.93	1.45	.30
Private/semiprivate incident location	.31	.45	.57	3.28	1.37	.48	.30	.46	.55	3.28	1.34	.52
Victim-perpetrator relationship	-	-	-	-	-	-						
Stranger (ref)	-	-	-	-	-	.01						
Other Known Person	1.16	.49	1.22	8.30	3.18	.02	1.22	.49	1.29	8.86	3.38	.01
Romantic Partner (current/former)	1.71	.55	1.88	16.24	5.52	.00	1.74	.55	1.94	16.76	5.70	.01
Victim mental health/disability condition	-.13	.33	.46	1.67	.88	.69	-.05	.34	.49	1.84	.95	.87
Victim substance use – Any[1]	.45	.35	.80	3.11	1.57	.19	.51	.35	.83	3.33	1.66	.15
Victim was a minor	.79	.44	.93	5.23	2.21	.07	.88	.45	1.00	5.83	2.42	.049
Victim race is non-White[1]	.54	.51	.62	4.68	1.71	.30	.62	.53	.66	5.19	1.85	.24
Suspect is a minor	-.74	.54	.17	1.36	.48	.17	-.71	.54	.17	1.42	.49	.19
Suspect race is non-White[1]	.45	.39	.73	3.36	1.57	.25	.36	.39	.66	3.09	1.43	.37
Total number of *physical* SP behaviors	-	-	-	-	-	-	.35	.25	.87	2.29	1.41	.16
Total number of *verbal* SP behaviors	-	-	-	-	-	-	.18	.19	.83	1.74	1.20	.33
Constant	-2.60	.77	-	-	.07	<.001	-2.89	.79	-	-	.06	<.001
x^2(df)	111.51 (15) $p < .001$						116.11 (17) $p < .001$					
Nagelkerke R^2	.38						.39					

Notes. 1. Measures were collapsed due to cell counts; comparison groups include: No substance use; White. 2. Suspect confessed was removed from the analyses, as it was only present in one case that was not referred.

Research Question 3: Prosecutorial Charging Decisions

To answer RQ3, two nested binary logistic regression models are estimated. First, Table 4.9 presents a nested binary logistic regression model estimating the independent effects of the overall frequency of victim self-protective behaviors on whether charges were filed. Second, Table 4.10 presents a nested binary logistic regression model estimating the independent effects of two composite scores—overall frequency of *verbal* victim self-protective behaviors and overall frequency of *physical* victim self-protective behaviors—on whether charges were filed.

In Model 1, three control variables had an independent effect on charging decisions. Cases with suspect confessions were more than eight times at greater odds of resulting in charges ($p < .001$). Second, when victim credibility was in question, the odds of charges being filed decreased by 79% ($p = .002$). Additionally, charges were 68% less likely when the victim used any substances ($p = .005$).

In Model 2a, three significant findings from the previous model retain significance here: suspect confessed (OR = 10.32, $p < .001$), victim credibility (OR = 0.21, $p = .002$), and victim use of substances (OR = 0.30, $p = .004$). Additionally, the victim being a minor led to 2.36 times greater odds of charges being filed ($p = .048$). Each additional SP behavior the victim engaged in led to an associated 1.41 times greater odds of charges ($p = .01$). Lastly, the increase in the Nagelkerke R^2 from 36% to 38%, in addition to the significant model fit statistics, suggests that the inclusion of these composite scores increased the overall model fit.

In Model 2b, compared to the previous model, suspect confession ($p < . 001$), victim credibility concerns ($p = .002$), and any substances used by the victim ($p = .005$)

all retained significance. The victim being a minor, in contrast, fell out of significance (p = .05). When the composite scores distinguished between *physical* and *verbal* SP behaviors, the physical composite score was statistically significant. As such, each additional physical SP behavior is associated with an increase in the odds of charging by 1.69 times (p = .03). Lastly, the increase in the Nagelkerke R^2 from 36% to 39%, in addition to the significant model fit statistics, suggests that the inclusion of these composite scores increased the overall model fit.

Table 4.9. Binary Regression estimating the total number of SP behaviors (2a) and prosecutorial charges (n = 267)

Variables	**Model 1**						**Model 2a**					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**95% CI's**		**OR**	***p***
At least one identified witness	.51	.42	.73	3.79	1.67	.22	.69	.44	.85	4.72	2.00	.11
Perpetrator used/threatened a weapon/force	-.34	.41	.32	1.58	.71	.40	-.66	.43	.22	1.21	.52	.13
Victim injury	.50	.35	.83	3.29	1.66	.15	.37	.36	.71	2.94	1.44	.31
Victim became unconscious	-.12	.44	.37	2.11	.89	.79	-.06	.45	.39	2.27	.94	.89
Victim participation	.26	.44	.55	3.07	1.29	.56	.25	.45	.53	3.08	1.28	.58
Suspect confessed	2.18	.54	3.06	25.41	8.82	<.001	2.33	.55	3.49	30.49	10.32	<.001
Victim credibility concerns	-1.56	.50	.08	.56	.21	.002	-1.58	.51	.08	.55	.21	.002
Incident location - Private/Semi-Private[1]	.46	.53	.56	4.44	1.58	.39	.59	.56	.60	5.40	1.81	.29
Victim-perpetrator relationship – Known person	-.62	.63	.16	1.84	.54	.32	-.64	.67	.14	1.94	.53	.33
Victim mental health/disability condition	-.72	.45	.20	1.17	.48	.11	-.62	.46	.22	1.32	.54	.18
Victim substance use – Any[1]	-1.15	.41	.14	.70	.32	.005	-1.19	.41	.14	.68	.30	.004
Victim was a minor	.72	.42	.90	4.65	2.05	.09	.86	.43	1.01	5.52	2.36	.048
Victim race is non-White[1]	.22	.53	.44	3.55	1.25	.67	.14	.54	.40	3.33	1.15	.80
Suspect is a minor	-.91	.56	.13	1.20	.40	.10	-.87	.57	.14	1.26	.42	.12
Suspect race is non-White[1]	.25	.43	.56	2.95	1.28	.56	.15	.43	.50	2.71	1.17	.72
Total number of SP behaviors	-	-	-	-	-	-	.35	.13	1.09	1.83	1.41	.01
Constant	-.81	1.02	-	-	.44	.43	-1.47	1.10	-	-	.23	.18
x^2(df)	77.49 (15) p <.001						84.57 (16) p <.001					
Nagelkerke R^2	.36						.38					

Notes. 1. Measures collapsed due to low cell frequencies; comparison groups include: stranger; no substance use; White.

Table 4.10. Binary Regression estimating total physical and verbal SP behaviors (2b) and prosecutorial charges (n = 267)

Variables	Model 1						Model 2b					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***
At least one identified witness	.51	.42	.73	3.79	1.67	.22	.71	.44	.86	4.83	2.04	.11
Perpetrator used/threatened a weapon/force	-.34	.41	.32	1.58	.71	.40	-.67	.44	.22	1.20	.51	.12
Victim injury	.50	.35	.83	3.29	1.66	.15	.41	.37	.73	3.08	1.50	.27
Victim became unconscious	-.12	.44	.37	2.11	.89	.79	-.09	.45	.37	2.21	.91	.83
Victim participation	.26	.44	.55	3.07	1.29	.56	.25	.45	.53	3.08	1.28	.58
Suspect confessed	2.18	.54	3.06	25.41	8.82	<.001	2.30	.56	3.36	29.65	9.98	<.001
Victim credibility concerns	-1.56	.50	.08	.56	.21	.002	-1.59	.51	.08	.56	.20	.002
Incident location - Private/Semi-Private[1]	.46	.53	.56	4.44	1.58	.39	.57	.56	.59	5.30	1.77	.31
Victim-perpetrator relationship – Known person	-.62	.63	.16	1.84	.54	.32	-.63	.67	.14	1.98	.53	.35
Victim mental health/disability condition	-.72	.45	.20	1.17	.48	.11	-.59	.46	.22	1.38	.56	.20
Victim substance use – Any[1]	-1.15	.41	.14	.70	.32	.005	-1.18	.42	.14	.69	.31	.005
Victim was a minor	.72	.42	.90	4.65	2.05	.09	.84	.44	.99	5.45	2.32	.05
Victim race is non-White[1]	.22	.53	.44	3.55	1.25	.67	.13	.54	.39	3.31	1.14	.81
Suspect is a minor	-.91	.56	.13	1.20	.40	.10	-.91	.57	.13	1.23	.40	.11
Suspect race is non-White[1]	.25	.43	.56	2.95	1.28	.56	.17	.43	.51	2.75	1.18	.70
Total number of *physical* SP behaviors	-	-	-	-	-	-	.53	.24	1.05	2.73	1.69	.03
Total number of *verbal* SP behaviors	-	-	-	-	-	-	.20	.21	.82	1.84	1.22	.33
Constant	-.81	1.02	-	-	.44	.43	-1.44	1.11	-	-	.24	.19
x^2(df)	77.49 (15) p <.001						85.36 (17) p <.001					
Nagelkerke R^2	.36						.39					

Notes. 1. Measures collapsed due to low cell frequencies; comparison groups include: stranger; no substance use; White.

Chapter 5 Discussion and Conclusions

Prior research finds that many victim behaviors undergo rigorous scrutiny by CJS actors, and these behaviors significantly influence variations in sexual assault case attrition (Spohn, 2020). However, there is a lack of research investigating whether victim self-protective behaviors are similarly scrutinized and impact CJS actors' perceptions of victim credibility. Therefore, examining the relationship between victim self-protective behaviors (VSPBs) and sexual assault case processing is important because persistent misconceptions that victims universally 'resist' during a sexual assault may have a negative impact on case processing when the victim did not 'resist'. Accordingly, understanding these nuances is crucial for enhancing the effectiveness of sexual assault case processing, ultimately reducing case attrition.

To shed light on this overlooked aspect, the primary aim of the current dissertation was to contextualize victim self-protective behaviors in sexual assault case processing by examining four outcomes related to CJS actors' perceptions of victim credibility and decision-making. In this endeavor, I investigated four research questions spanning two elements of sexual assault case processing: CJS actors' perceptions of the victim's credibility and case attrition in sexual assault cases. The research questions were:

1. Do VSPBs influence CJS actors' perceptions of victim credibility?
2. Do VSPBs influence law enforcement's decision to refer a case to the prosecutor?
3. Do VSPBs influence the prosecutor's decision to file charges?
4. Do VSPBs influence whether a case is convicted?

These research questions were explored using 469 reported sexual assault cases investigated by the ACSO in Anoka County, Minnesota. Following the collection of data on the presence of fourteen distinct types of victim self-protective behaviors, this study

generated three composite scores. These scores represent the overall frequency of (1) all self-protective behaviors reported by the victim, (2) all physical victim self-protective behaviors (VSPBs), and (3) all verbal VSPBs. Four outcomes were investigated related to sexual assault case processing: CJS actors' perceptions of victim credibility, law enforcement case referrals, prosecutorial charging, and case conviction. Further, the independent influence of VSPBs on study outcomes was assessed through the inclusion of several theoretically relevant variables. Presentation of study findings included univariate statistics, bivariate means tests and multivariable logistic regression analyses.

Accordingly, this chapter provides an overview of the main findings, in addition to contextualizing these findings in prior empirical and theoretical knowledge. This chapter begins by summarizing important significant findings for each research question in addition to contextualizing these findings in the broader theoretical and empirical literature. Next, key takeaways from the current study and policy implications are discussed. Then, limitations and future research are discussed, followed by concluding remarks.

Summary of Main Findings

Table 5.1 presents a summary of significant findings across all study outcomes.

Table 5.1. Summary of Key Findings

	Credibility	Case Referral	Charges	Conviction
Victim participation	*n.s.*	+	*n.s.*	*n.s.*
Suspect confessed	*n.a.*	*n.a.*	+	*n.s.*
Credibility concerns	*n.a.*	*n.s.*	-	*n.s.*
Victim-perpetrator relationship	-	+	*n.s.*	ø
Victim mental health/disability condition	+	*n.s.*	*n.s.*	*n.s.*
Victim substance use	*n.s.*	*n.s.*	+	*n.s.*
The victim was a minor	*n.s.*	+	+	+
Victim race – non-White	-	*n.s.*	*n.s.*	*n.s.*

Suspect race – non-White	*n.s.*	*n.s.*	*n.s.*	-
Total SP behaviors	*n.s.*	+	+	-
Total *physical* SP behaviors	*n.s.*	*n.s.*	+	*n.s.*
Total *verbal* SP behaviors	*n.s.*	*n.s.*	*n.s.*	-

Notes. 1. Only multivariate findings from Model 2a or 2b are presented, with the exception of conviction, which presents significant bivariate relationships. 2. Variables not included were not significant in any multivariable model (or bivariate analysis for case conviction.
2. Key:
+ = significant, positive relationship (e.g., increased odds)
- = significant, negative relationship (e.g., reduced odds)
ø = significant relationship, but the direction is unclear
n.s. = non-significant
n.a. = not applicable

RQ1: Do VSPBs influence CJS actors' perceptions of victim credibility?

In response to RQ1, this study identified no relationship between victim self-protective behaviors and CJS actors' perceptions of victim credibility in any bivariate or multivariate analyses. In short, victims engaging in self-protective behaviors did not influence CJS actors' perceptions of their credibility. This finding was surprising considering long-standing theoretical frameworks suggesting that 'victim resistance' was linked to CJS actors' misconceptions of "real rape" and "ideal victims" and, thusly, would presume to influence victim credibility assessments (Christie, 1986; Estrich, 1987; Frohmann, 1991; LaFree, 1987). However, upon a closer examination of the variables significantly predicting victim credibility concerns, cases where the victim had a previous mental health issue or disability condition more than doubled the odds of victim credibility concerns. Therefore, perhaps the lack of significant association between VSPBs and victim credibility concerns may be attributed to the stronger influence previous mental health/disability conditions have on this outcome. Although, the research is sparse on *why* mental health/disability conditions may be linked to victim credibility perceptions.

Nevertheless, in a recent meta-analysis on barriers sexual assault survivors with intellectual disabilities[20] face in the CJS, McGilloway, and colleagues (2020) found that a primary theme in this limited body of research references communication issues between victims with disabilities and CJS actors. For instance, Keilty and Georgina (2010) conducted exploratory interviews with members of the New South Wales police service in Sydney, Australia, and found that officers expressed frustration when victims had communication difficulties. In a quote from an officer, he stated:

> "The woman's story changed throughout. The officer read it back to her and asked, "Is this what happened?" She then changed the story again. It wasn't the women's fault, but it caused a great deal of frustration and eventually they aborted the interview and any steps toward taking a statement" (p. 285).

Additionally, studies from the victims' perspectives, when CJS actors do not attempt to, or have the resources to, make reasonable accommodations to fill these communication gaps, victims are left feeling unheard and dismissed by the criminal justice system (McGilloway, et al., 2020). In a qualitative study, a victim highlighted challenges arising from the lack of understanding among CJS actors regarding disabilities, "They don't have a clue that they could lose you in just a couple of words. If you say a big word or something I don't understand, yeah, it's very difficult, I mean" (Child et al., 2011, p. 257). Moreover, mental health illnesses and associated medications are linked to difficulty recalling events, which is exasperated under stress/trauma like a sexual assault (Goodman et al., 1997; Morabito et al., 2016). Taken together, this study's finding that victim mental health/disability conditions significantly predict victim credibility concerns may illustrate unique communication barriers in these populations. Since victims may

[20] American Association on Intellectual and Developmental Disabilities (n.d.). Definition of intellectual disability. Retrieved April 23, 2024, from https://www.aaidd.org/intellectual-disability/definition

experience different barriers depending on the mental health/disability condition, future research should consider distinguishing between conditions.

Furthermore, this study found that the odds of victim credibility concerns declined when the victim and perpetrator were non-strangers (i.e., "Other" known or current/former romantic partners). This finding is inconsistent with prior theoretical frameworks, which hypothesize that stranger sexual assaults are perceived as "real rape" and, thusly, taken more seriously by the CJS (Estrich, 1987; Kerstetter & Van Winkle, 1990; O'Neal, 2019). Nonetheless, empirical studies tend to concur that there is a relationship between the victim-perpetrator relationship and CJS actors' perceptions; however, the nature of this relationship is unclear (Spohn & Holleran, 2001). Some studies find that CJS actors perceive non-stranger sexual assaults as more suspicious or less serious (Jordan, 2005; O'Neal et al., 2019). Other studies find cases are more likely to advance to the next CJS stage when the victim and suspect were non-strangers; though, this is likely not due to reduced scrutiny of these cases but rather ease of suspect identification (B. Campbell et al., 2021; Lovell et al., 2020; Tasca et al., 2023).

One possible explanation for the significant, negative relationship between victim-perpetrator relationship and credibility concerns could be that cases involving non-strangers inherently have more evidence available for law enforcement consideration. For instance, emerging evidence suggests there is an intersection between stranger sexual assaults and outdoor sexual assaults (Lovell et al., 2024), which presents additional challenges for evidence gathering compared to cases where the victim can provide evidence such as bed sheets. Research has also found that stranger sexual assaults are more likely to involve serial sexual offenders who appear to intentionally use tactics

to avoid detection, such as attacking outdoors (Ceccato et al., 2019; Lovell et al., 2017). Therefore, the greater abundance of evidence in non-stranger cases may reduce the likelihood of identifying concerns regarding victim credibility. Unfortunately, MN SAKI did not have additional measures to quantify the evidence collected beyond the SAK.

RQ2: Do VSPBs influence law enforcement's decision to refer a case to the prosecutor?

In response to RQ1, this study identified a significant, positive relationship between the composite score representing the sum of all self-protective behaviors reported by the victim and law enforcement case referment. This finding aligns with theoretical frameworks, which would hypothesize that engaging in numerous VSPBs may signal to investigators that the victim fits the profile of an "ideal victim" reporting a "real rape" (Christie, 1986; Estrich, 1987). Indeed, there is much research connecting victim 'resistance' to victim-blaming attitudes in layperson samples (Angelone et al., 2015; Rawn et al., 2023). This finding is further supported by qualitative research illustrating how victims must 'prove' their sincerity before being taken seriously by an investigator – e.g., "she has to prove she wants this ... then I'll [detective] take a look" (Campbell & Fehler-Cabral, 2018; p. 89). In further support, research has found that physical and verbal 'resistance' strategies are associated with police decision-making outcomes in cases of domestic violence (Pinciotti & Seligowski, 2021; Wagers et al., 2023) and intimate partner sexual assault (O'Neal & Spohn 2017).

From a methods perspective, another explanation for this significant, positive relationship concerns how these data were collected. In the MN SAKI, part of extracting information from the case files involved reading victim interview transcripts. During the

MN SAKI, I read victim transcripts ranging from a brief 1-2 pages to transcripts spanning several dozen pages. Among the cases I read, longer victim interviews provided a crucial foundation for law enforcement, which guided the entire investigation. For example, victim interviews provided the basis for various search warrants, pictures, and collection of additional evidence (e.g., clothing, sheets). Though transcripts provide the added benefit of reading the victim's account in their own words, prior research shows that the quality of these interviews may be heavily dependent on the interviewer (Pattavina et al., 2021; Patterson, 2011). Accordingly, many potential factors may influence the quality and length of a victim interview, such as incident duration, officer training, and victim needs, which were not measured in MN SAKI (Westera et al., 2020). A potential methodological explanation for this relationship could be that as the number of self-protective behaviors increases, it leads to longer transcripts, resulting in more evidence being available.

Additionally, this study found that the victim-perpetrator relationship had a significant, positive relationship (net controls) with law enforcement case referrals. Specifically, when the victim and perpetrator were non-strangers, law enforcement case referment odds were about three times greater for "Other known persons" and about five times greater for current/former romantic partners when compared to strangers; notable, controls for suspect identification (i.e., all cases included in these models had an identified suspect). Similar to RQ1 findings, this relationship is inconsistent with prior research suggesting that stranger sexual assaults, aligning with "real rape" stereotypes, are more likely to advance (Estrich, 1987; Kerstetter & Van Winkle, 1990; O'Neal, 2019; Steffensmeier et al., 1998). Nonetheless, empirical studies produce mixed findings regarding the nature and direction of this relationship (Spohn & Holleran, 2001). On the

one hand, many studies find arrest is more likely when the victim and suspect are strangers, compared to non-strangers (Bachman, 1998; Bouffard, 2000; Kerstetter, 1990; LaFree, 1981, see for contrary evidence Alderden & Ullman, 2012b).

Even so, stranger sexual assaults may present additional investigative challenges beyond suspect identification, which may explain the positive relationship this study found between law enforcement case referrals and victim-perpetrator relationships. For instance, sexual assaults involving current or former romantic partners, incidents are more likely to occur at one of their private residences (Lovel et al., 2019). Accordingly, the incident location is likely accessible to law enforcement either by permission or a search warrant. In general, most sexual assaults, especially when the perpetrator is known to the victim, are more likely to occur in a private location (Planty et al., 2013). In contrast, given recent research identifying an intersection between stranger sexual assaults and outdoor sexual assaults (Lovell et al., 2017, 2024), an outdoor sexual assault cannot be contained in the same way an apartment or house can be – evidence is exposed to other persons walking by, weather, etc.

Further, the victim may have greater difficulty pinpointing the location of the incident when it occurred outdoors compared to in the room of a house (Lovel et al., 2019). As previously discussed, research has also found that stranger sexual assaults are more likely to involve serial sexual offenders who appear to use tactics to intentionally avoid detection, such as attacking outdoors (Ceccato et al., 2019; Lovell et al., 2017). Therefore, similar to RQ1 findings, this relationship may be indicative of greater accessibility to evidence when the victim and perpetrator were non-strangers, which subsequently made cases more likely to advance to the next CJS stage.

Additionally, this study found a significant, positive relationship between the victim's minor status and law enforcement case referrals; specifically, law enforcement was about two and a half times more likely to refer a case when the victim was a minor. Prior research provides several explanations for this finding. Cases involving a minor victim, for instance, may be perceived as more serious because the crime was against a vulnerable person (Angelone et al., 2015; Leclerc et al., 2011; Rawn et al., 2023). Relatedly, adult suspects may be perceived as more culpable or more dangerous to the community due to offending against a person perceived as vulnerable, which would be consistent with a focal concerns perspective (Steffensmeier et al., 1998, 2017).

There are additional practical reasons why cases involving a minor victim may result in greater odds of law enforcement case referment (Steffensmeier et al., 1998, 2017). In this regard, many states (including Minnesota) have *statutory rape*[21] laws which do not require proving nonconsent, only that sexual contact occurred (Burrow et al., 2020). In the data used in the current study, the victim was a minor in 28.1% of cases, but the suspect was a minor in only 11.7% of them. As such, cases falling under statutory rape laws may present fewer evidentiary complexities, as the necessity to establish nonconsent is eliminated for CJS.

The final significant finding from the case referment models concerns victim participation. This study found that victim participation increased case referral odds more than ten-fold, which is consistent with a substantial body of literature (Lapsey et al., 2022, 2023). Victim participation in the criminal justice system is consistently one of the strongest predictors of sexual assault case attrition, especially regarding law enforcement

[21] Minnesota criminal sexual conduct in the first degree (§609.342).

decisions (Campbell et al., 2021; Holleran et al., 2010; Lapsey et al., 2022, 2023; Spohn & Tellis, 2014). For added context, MN SAKI stakeholders consistently advocated for a victim-centered approach, which was defined as prioritizing the victim's wishes regarding reopening the case (see for interviews, Richards et al., 2024). Additionally, the nature of sexual assault inherently places the victim at the center of all case evidence (Lovell et al., 2021). Accordingly, it is nearly impossible for cases to advance in the criminal justice system without the victim's participation. Further, prior research has identified many reasons why victims may decide to withdraw participation after the initial report (Cantor et al., 2015; Fisher et al., 2003; Kilpatrick et al., 2007; Spohn et al., 2014; Spohn & Tellis, 2014).

RQ3: Do VSPBs influence the prosecutor's decision to file charges?

In response to RQ3, this study identified two significant findings for victim self-protective behaviors in the multivariable analyses. First, net other control variables, there was a significant, positive relationship between the overall frequency of self-protective behaviors (any) reported by the victim and the prosecutor filing charges: for each additional self-protective behavior, charging odds increased by 1.41 times. Second, net other control variables, there was a significant, positive relationship between the overall frequency of *physical* VSPBs and charging: for each additional *physical* VSPB, charging odds increased by 1.69 times.

Similar to RQ2 interpretations, finding a positive relationship between victim self-protective behaviors and charges is consistent with the notion that victims engaging in victim self-protective behaviors are tied to perceptions of the "ideal" or "legitimate" victim (Christie, 1986; Estrich, 1987). Notably, the current study finds that the composite

score for the overall frequency of any VSPBs significantly and independently predicted decisions made by both the police and prosecutor, suggests a downstream orientation effect (Frohmann, 1991, 1997). Accordingly, these findings may imply that prosecutors, with their *downstream orientation* toward jury reactions and convictions, influence policy decisions on what charges are likely to be filed (Pattavina et al., 2016). However, this assertion cannot be confirmed for the current study without in-depth interviews with the original CJS actors who made these decisions for the MN SAKI cases. Also similar to RQ2 findings, this relationship could be the product of the relative amount of information in the case file for the prosecutor to evaluate.

Interestingly, the prosecutor filing charges was the only study outcome where the overall frequency of *physical* VSPBs was statistically and independently predictive in the multivariate analyses. These findings, therefore, suggest that physical VSPBs have more influence than verbal VSPBs at this case processing stage. One potential reason for this, as suggested by theoretical frameworks, is that physical self-protective behaviors align more closely with stereotypical perceptions of 'real rape,' thereby bolstering the impression of an 'ideal' victim compared to victims who only engaged in verbal behaviors (Estrich, 1987; O'Neal et al., 2019; O'Neal & Hayes, 2020). Studies comparing a layperson's perceptions of physical and verbal VSPBs consistently find that physical behaviors result in the most favorable perceptions of the victim (Angelone et al., 2015; Krulewitz & Nash, 1979; McCaul et al., 1990; Rawn et al., 2023; Rogers et al., 2009; Scroggs, 1976). Therefore, the suggestion that these perceptions may be evident in prosecutors as well is plausible and supported by the current study's findings.

In further support, thinking back to the historic evidentiary requirements mandating the demonstration of 'victim resistance' in U.S. rape statutes, the prevailing method for establishing 'utmost resistance' often hinged on showing severe physical harm to the victim (Estrich, 1987; Spohn & Horney, 1992) which is uncommon in sexual assault cases (Alderden et al., 2021). Even after the removal of these resistance requirements, prosecutors see many reasons why victim injury bolsters their ability to build a case. In this regard, Alderden and colleagues (2021) conducted semi-structured interviews with assistant district attorneys (ADA). Findings revealed that prosecutors viewed victim injury evidence as a tool to corroborate the victim's allegation, refuted the suspect's consent claim, and provided an opportunity to collect forensic evidence in cases (see also Cross et al., 2017). Though unclear in existing literature, it would be problematic for CJS actors to anticipate victim injury anytime when physical VSPBs are reported (Kleck & Tark, 2014).

The interpretation that prosecutors may weigh physical VSPBs more favorably than verbal VSPBs may also be indicative of the current study's measurement of VSPBs. To reiterate, this study measured physical VSPBs as a composite score consisting of the total number of the following: NOWEPATK (10.9%), RANHIDE (9.6%), and STRUGGLE (34.4%) (see Table 3.2). These codes signified instances where the victim either physically fought back (e.g., kick, bite), struggled against the perpetrator (e.g., pushed), or attempted to escape the attack. Regarding the former two, these behaviors (e.g., scratching, pushing) are more likely to result in physical evidence such as skin or blood samples and visible injuries (Alderden et al., 2021; Gray-Eurom et al., 2002; Henry & Jurek, 2020;), which a prosecutor could present to a jury. This explanation is supported

by numerous studies that have identified the significant weight physical evidence has on prosecutorial charging decisions (Campbell et al., 2009; Cross et al., 2017; Johnson et al., 2012; Menaker et al., 2017; Peterson et al., 2013).

In addition to these findings, four control measures had significant and independent relationships with the prosecutor filing charges: suspect confessed, credibility concerns, victim substance use, and the victim was a minor.

Though only 6.6% (n = 31) cases involved a suspect confession in the entire study sample, charging odds increased ten-fold when the suspect confessed. This finding is unsurprising because a suspect confession eliminates uncertainty of the suspect's guilt. According to Albonetti's (1986, 1987) "uncertainty avoidance" framework, CJS actors seek to eliminate as much uncertainty as possible to inform their decision-making. The notion of mitigating uncertainty in CJS actors' decision-making is also an element of Frohmann's (1991, 1997) *downstream orientation* effect (wherein prosecutors prioritize case convictability above all else) in addition to Steffensmeier and colleagues' (1998) focal concerns perspective. All these theoretical frameworks have a common thread: all assert that CJS actors prioritize mitigating uncertainty. In short, this finding indicates that prosecutors aim to mitigate uncertainty by filing charges when convictions are likely.

For the multivariate analyses for RQ3, Model 2a identified a significant relationship between the victim's minor status and charges. Similar to RQ2 findings, this finding suggests that prosecutors are more inclined to file charges in cases involving a minor victim. Plausible explanations for this likely resemble why the victim's minor status was also significantly predictive of law enforcement case referment. To reiterate, cases involving minors are likely associated with perceptions of offense seriousness and

suspect dangerousness, which are consistent with a focal concerns perspective (Angelone et al., 2015; Rawn et al., 2023; Steffensmeier et al., 1998, 2017). In addition, practical reasons regarding *statutory rape*[22] laws suggest that cases involving a minor help reduce the uncertainty associated with charges.

Moreover, the current study found a significant, negative relationship between victim credibility concerns and charging: an approximate 80% decrease in odds. This finding suggests that victim credibility concerns are a primary factor driving prosecutors' charging decisions, which is consistent with an extensive degree of literature finding this one of the most influential predictors of case attrition (Alderden et al., 2021; Alderden & Ullman, 2012b; Beichner & Spohn, 2005, 2012; Kerstetter, 1990; Kerstetter & Van Winkle, 1990; Lapsey et al., 2022, 2023; Morabito et al., 2016; O'Neal et al., 2015, 2019; O'Neal & Hayes, 2020; O'Neal & Spohn, 2017; Spohn et al., 2001; Spohn & Holleran, 2001; Spohn & Tellis, 2014). To a lesser degree, victim substance use decreases charging odds by approximately 70%, which is still consistent with prior literature showing that CJS actors can perceive alcohol and drug consumption as "credibility-damaging" behavior (O'Neal et al., 2019; Spohn & Tellis, 2014). Both these findings create a sense of uncertainty in an environment where an aversion to uncertainty dominates (Albonetti, 1991; Frohmann, 1991, 1997; Spohn & Tellis, 2012).

RQ4: Do VSPBs influence whether a case is convicted?

In response to the final research question investigated by the current study (RQ4), the current study found significant, bivariate relationships between the composite score for the total number of victim self-protective behaviors reported and the composite score

[22] Minnesota criminal sexual conduct in the first degree (§609.342).

for the total number of *verbal* VSPBs reported and conviction. For both findings, composite score means were lower in the case conviction group compared to the group without case convictions, which suggests that fewer VSPBs are associated with case conviction. This finding was surprising as the relationship between VSPBs and case conviction is in the opposite direction of all other significant VSPB findings. However, interpreting these findings as a "true" negative relationship is strongly cautioned for two reasons.

First, due to the small subsample size, the findings reflect bivariate analyses, meaning that the influence of control measures could not be considered. Suppose the subsample was sufficient to support a binary logistic regression analysis. In that case, it is plausible that the observed significant relationship may become attenuated or non-significant when controlling for other explanatory variables with potentially stronger associations with the outcome. Second, scholars tend to concur that a strong predictor of sexual assault convictions is whether the prosecutor filed charges (Lovell & Langhinrichsen-Rohling, 2023; Spohn & Tellis, 2014; O'Neal et al., 2015). Considering that only 30.3% of eligible cases were charged by the prosecutor, yet 76.5% of cases charged resulted in a conviction in the current study, this is certainly a plausible assumption. Accordingly, while this study found that two composite scores for VSPBs had a significant, negative relationship with case conviction, perhaps a more plausible interpretation is that prosecutors are intimately aware of how to attain a conviction and, therefore, only pursue charges on cases characterizable as "slam dunks" (Spohn & Tellis, 2014).

Research & Policy Implications

One main takeaway from the current study is that victim self-protective behaviors (VSPBs) were found to have an independent, predictive relationship on two sources of sexual assault case attrition: law enforcement case referment and prosecutorial charging. Moreover, these relationships predicted case attrition even when controlling for well-established factors with strong existing associations, such as victim participation (Lapsey et al., 2023; Lovell et al., 2021) and victim credibility (Lapsey et al., 2023; Morabito et al., 2016). As such, these findings indicate that VSPBs are an important confounding variable and should be included in future studies examining case processing outcomes.

In light of these findings, two theoretical insights are offered. First, the positive associations between VSPBs and case attrition indicate consistency with all theoretical framings reviewed in Chapter 2, such as notions of "real rape" (Estrich, 1987; see also Albonetti, 1986; Frohmann, 1991; Steffensmeier et al., 2017). Second, even though it was outside the scope of the current study to test which theoretical concepts *best* represent VSPBs, it is worth reiterating that previous studies have suggested these could be a facet of victim/suspect blameworthiness or perceptual shorthand (i.e., focal concerns) (Lapsey et al., 2023; O'Neal & Hayes, 2017). However, depending on which, it would determine if VSPBs are considered legal or extralegal factors, which has implications on whether their influence is a sign of poor institutional decision-making. Both these theoretical insights call for the need for additional research incorporating VSPBs as a standard measure to include in examinations of sexual assault case processing. Since there is still no consensus on the most optimal way to measure VSPBs, I advocate for collecting at the most detailed unit of analysis possible, like the 14 sub-types originally collected in the

current study, in order to allow for methodological testing of different measurement types (e.g., O'Neal & Kaiser, 2015).

Furthermore, since the current study supports the importance of understanding VSPBs as they relate to sexual assault case processing, I argue that victim self-protective behaviors should be studied using different data contexts beyond administrative case files. In this regard, an excellent direction for novel exploration would be to engage survivors of sexual assault in conversations surrounding how they define protective behaviors and their perspectives on their utility. Even though the current study was able to code VSPBs using the victim's own words (i.e., transcripts), the research team could not ask follow-up questions about whether there was a decision-making calculus involved in the decision to self-protect (Cornish & Clarke, 2008; Leclerc & Cale, 2015) or did self-protection feel purely instinctual, as if involuntary (Campbell, 2015; Cuevas et al., 2018; Mathews & Blyer, 2023; Möller et al., 2017). Recently, a handful of qualitative studies have begun asking these questions (Canan et al., 2023; Cobbina, 2013). In addition to interviews, survey research could present an excellent opportunity to ask about VSPBs to a larger audience of participants, such as through a campus climate survey (Hayes & O'Neal, 2021).

Furthermore, the current study replicated previous findings in that a combination of legal and extralegal factors predicted study outcomes. In particular, the current study found that the strongest predictor of law enforcement case referrals and prosecutorial charges were legal factors (i.e., victim participation and suspect confession). An interesting observation from these findings is that case referral was not predicted by victim credibility concerns nor victim substance use but had the second and third largest

odds ratios in the charging decisions model. Using a focal concerns lens, this finding would suggest that the law enforcement officers in the current study were not as influenced by aspects of perceptual shorthand to the same degree as the prosecutors in the current study. To address this problem, one policy implication would be to abolish conviction rates as a measure of success for prosecutors. A second policy implication would be to provide more targeted training to prosecutors on the underlying causes of the high rates of case attrition witnessed in sexual assault cases (Thompson & Tapp, 2023). In this context, training could encourage prosecutors to pursue charges in cases that meet legal criteria, even if they are not straightforward "slam dunk" cases. In essence, training would discourage using the informally adopted 'convictability' or 'trial sufficiency' standard that is currently applied to sexual assault cases (Campbell, 2008; Spohn & Tellis, 2014). In order to locate cutting-edge recommendations for prosecutorial trainings, the non-profit organization, AEquitas, is dedicated to improving prosecution practices related to gender-based violence and human trafficking (Aequitas, n.d.).

Findings from the current study still have implications for law enforcement training. Since victim participation was the strongest predictor of sexual assault case attrition in the current study, law enforcement training should address *why* victims choose to withdraw from the investigation and how might trauma-informed investigative techniques improve victim participation. Of course, there are many reasons why victims may decide not to pursue an investigation; however, research is clear that negative interactions survivors of sexual assault have had with law enforcement are part of this problem (Campbell et al., 1999; Campbell & Raja, 2005; Murphy-Oikonen et al., 2022; Page, 2007, 2008, 2010). Training should consider addressing this empirical literature in

a digestible format geared toward non-academic audiences. The goal of a training format such as this would be to provide officers with a rare 10,000-ft view of sexual assault case attrition, particularly with their role in improving this (B. Campbell et al., 2019). Since law enforcement officers are often accustomed to handling their ongoing caseloads and rarely receive updates on cases sent on to be charged, tried, convicted, and sentenced, officers have scarce opportunities to contextualize their day-to-day activities in the larger system. In this regard, research shows that training has been an effective tool for law enforcement to dispel previously held rape myths, identify how personal biases can affect decision-making, and improve trauma-informed investigative techniques (B. Campbell et al., 2019; Darwinkel et al., 2013; Tidmarsh et al., 2020; Franklin et al., 2019).

A final policy implication is to advocate for continued education and awareness efforts targeted toward the public in order to combat persistent rape myths which lead to victim-blaming attitudes. While many scholars argue that self-defense training is a source of empowerment and has the potential to help avoid rape competition (Cermele & McCaughey, 2022; Ullman, 2022a, 2022b), it is equally important to educate individuals on the *neurobiology of sexual assault.* This helps ensure awareness that even with training, VSPBs may not be the product of a rational, calculated decision made during the moment. This approach may help alleviate the self-blame and responsibility victims often place on themselves. Moreover, it would contribute to an informed jury pool, so that *rape myths* do not unfairly impact cases that do end up at trial. Most importantly, education would reinforce the idea that, regardless of whatever strategies someone may engage in, sexual assault is never the victim's fault.

Limitations & Areas of Future Research

Even though the current dissertation contributed a novel exploration of victim self-protective behaviors and their intersection with sexual assault case processing, this study was not without limitations. First, the sample of the current study encompasses sexual assault cases from 1985 to 2015, predating the advancements in investigative practices following the MN SAKI project and its subsequent trauma-informed training initiatives (see Richards et al., 2024). These initiatives were informed using the extant literature regarding effective law enforcement and prosecutorial training practices (see e.g., AEquitas, n.d., Campbell et al., 2019). Therefore, future research would benefit from replication analyses using contemporary data, which would additionally reveal whether such initiatives effectively improved practices in the long-term.

Second, the presented findings are not generalizable across all jurisdictions or all sexual assaults. The data used in this study consisted of all reported sexual assaults from 1985-2015, with a previously untested SAK involving a female victim and male perpetrator from a single county in Minnesota. Consequently, findings are not generalizable to reported sexual assaults with a tested SAK or no SAK associated with the case, unreported sexual assaults, sexual assaults involving a male victim or female perpetrator, nor to jurisdictions, unlike Anoka County. Future research would benefit from an investigation on VSPBs and sexual assault case processing for cases with male victims or female perpetrators. In addition, the current study's sample and the population of Anoka County are overwhelmingly White. For these reasons, future research should consider how these findings may differ in jurisdictions with greater racial, ethnic, and cultural diversity.

Third, related to ACSO, this department had 133 sworn law enforcement officers as of 2019 (FBI, 2019). For comparison, the Bureau of Justice Statistics released a report, "Local Police Departments Personnel, 2020," which found that 46% of all local law enforcement agencies had fewer than ten full-time sworn officers (Goodison, 2022). Accordingly, ACSO has more staffing, as evidenced by the MN SAKI having sexual assault detective dedicated to solely investigation project cases (Richards et al., 2024), than nearly half of all other law enforcement agencies in the U.S. Some recommendations from the current study, therefore, may not be applicable to smaller agencies. Future research, therefore, should prioritize the critical need for replication research in additional jurisdictions to expand our understanding of how local contextual factors confound the relationships identified in the current study (Church, 1985).

Fourth, the current study used secondary administrative data, which came in the form of complete case file records. Such data has been critiqued because its collection has an *administrative* rather than research purpose, which means some factors were unmeasurable in the current study. For example, case files would not have information on any practices by CJS actors that are not recorded in a supplementary investigative report or similar document. This means that information on the agency's changes in practices and cultural norms over the study period was unmeasurable here. Notably, studies using case file records are limited by redacted case files, often to protect anonymity, note that study interpretations are often limited to CJS actors' words (Alderden & Ullman, 2012b; O'Neal et al., 2015). The current study, however, had the added benefit of reviewing complete case file records, including all witness statement transcripts (including victim and suspect). In a study measuring *victim* self-protective behaviors, it is an added strength

to the current study that we were able to review the victim's account in her own words. Nonetheless, the suspect's perspectives were not included in the current study. Future research should consider exploring offenders' perceptions of victim self-protective behaviors and whether they ever deterred them.

Fifth, demographic information on the detectives assigned to the sexual assault case or the prosecutor who made charging decisions would not have been recorded in case files (Alderden & Ullman, 2012; Anderson et al., 1997). However, considering the research setting where members of the research team, along with myself, observed mostly White male detectives and a White male MN SAKI prosecutor, it is unlikely that meaningful race-gender dyads would have been feasible even if this information was available. Future research should, however, explore race-gender dyads between victims and CJS actors in addition to suspects and CJS actors. Additional information which may reveal nuances relevant to sexual assault case processing research includes number of years of experience for each CJS actor involved in the case, jurisdiction size, and norms of the courtroom workgroup.

Sixth, the current study did not have enough cases with charges filed to achieve sufficient statistical power for binary logistic regression analyses on the case conviction outcome. Though this is not an uncommon issue in sexual assault case processing research because so few cases result in charges, it does limit the current study's ability to understand what factors drive convictions; though, scholars generally agree that sexual assault convictions are driven, in large part, by whether the prosecutor filed charges (Lovell & Langhinrichsen-Rohling, 2023; Spohn & Tellis, 2014; O'Neal et al., 2015). Nevertheless, future research should aim to sample enough sexual assault cases in order

to analyze subgroups at the end of the criminal justice process, such as convictions and sentencing.

Seventh, I chose to use two measurement strategies for victim self-protective behaviors, which consisted of composite scores. This proved to be a relatively novel approach, which, to my knowledge, has only been replicated in one additional methods paper (O'Neal & Kaiser, 2015). The decision to use composite scores was made after conducting preliminary analyses on nine alternative measures of self-protective behaviors (see Appendix B). Still, one could argue that a categorical measure, similar to the ones used in previous VSPB studies (Wong & Balemba, 2016, 2018), may better represent this phenomenon. With the exception to O'Neal and Kaiser (2015), there is a scarcity of methodological research on victim self-protective behavior measurement. In order for the field to advance our understanding of victim self-protective behaviors, in general, it will require future researchers to consider taking on these endeavors. Despite these limitations, this study provided a novel exploration of victim self-protective behaviors using novel measurement approaches in addition to providing insights on sexual assault case processing in a single Minnesota jurisdiction.

Conclusions

Sexual assault consistently ranks among the most underreported violent crimes in the United States (Thompson & Tapp, 2023; Tjaden & Thoennes, 2006). This underreporting is partly attributed to the negative interactions survivors experience with criminal justice system actors, such as law enforcement and prosecutors. Coupled with high rates of case attrition, understanding factors contributing to poor case processing

outcomes, including perceptions of the victim and criminal justice system actors' decision-making, is crucial.

Tangentially, victim self-protective behaviors refer to the range of actions, reactions, or strategies employed by individuals to mitigate or prevent harm from a crime, such as sexual assault. Despite decades of research on this, there remains a paucity of research investigating the potential impact these behaviors have on sexual assault case processing outcomes (e.g., perceptions of the victim's decision-making).

To fill this gap, the current study used a sample of 469 case file records from sexual assault investigations in a single jurisdiction in Minnesota. Research questions were explored through a series of bivariate and multivariate logistic regression analyses, assessing factors independently influencing study outcomes. Findings have important implications for the intersection of theoretical and empirical research on victim self-protective behaviors and sexual assault case processing. Policy implications are discussed and include recommendations for improving criminal justice system actors' decision-making, with the ultimate goal of reducing case attrition in sexual assault cases.

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Appendices

Appendix A.
Examples of Victim Self-Protective Behaviors by Type

Victim Self-Protective Behaviors	Example
1. NOGUNTHR	"So I went and grabbed the screwdriver. I grabbed the screwdriver and I said, "You 're not going to disrespect me anymore, [S], in this house. Call me out of my name one more time and we both going to be hurtin' tonight."
2. NOWEPATK	"In front of me. It was like I was going like this and then he was going like this the whole time and then I scratched, I scratched him one time and that's how I broke my nail…"
3. NOWEPTHR	"Well, I did mention my boyfriend's going to kick your ass. He's like, "I'd like to see him try.""
4. SCAREOFF or SCREAM	"A. I just kept screaming, no, no, no, no, no, no… Q. Are you yelling or are you just…are you telling him or…. A. I was yelling..."
5. CALLPOL	"I grabbed the house phone and called 911- -and then he heard me talking to the police and I told him I called the cops and that's when he finally left."
6. GETHELP	"I called him [Victim's friend] so it rang once so he could see my name on his Caller I.D…so he would call me back. Uhmm, I didn't stay on the phone to talk to him because I didn't want any violence to go on if he were to wake up and see me on the phone."
7. STRUGGLE	"So I kept trying to push him off and he said that I can just leave so I was getting up and I grabbed my keys and he pulled me back on his bed and he took all my clothes off and I couldn't, I tried getting them back on but then he put them in his closet and then he just got on top of me and it all just happened, he held me down."
8. RANHIDE	"...then I struggled to get away from him and finally I did and I ran downstairs and opened the garage cuz my sister and [roommate] were outside smoking and asked them to call 911...."
9. ARGUE	"A. All the way to the back of my head. He slipped me over and stuck it in and I told him to get off of me."
10. COPRSTALL	"A. I didn't … I guess I didn't know what to think at the time. I guess I was just like I can't believe this is happening and then I...I think that was when I covered my eyes and I was like, [S] you know I was like, don't no you know and I just kept my eyes shut and I put my hands over my eyes until it was done."

Notes. Grammatical errors are true to the original transcription.

Appendix B.
Nine Alternative Measures for Victim Self-Protective Behaviors

#	Variable Description	Variable Structure	Coding
1.	Any SP behaviors	Single dichotomous	Any of NOWEPATK + RANHIDE + STRUGGLE + GETHELP+ NOGUNTHR + NOWEPTHR + SCAREOFF or SCREAM + CALLPOL + ARGUE + COPRSTALL.
2.	4-Type theoretically-replicated (TR) measure	Four dichotomous	A. Forceful Physical (i.e., NOWEPATK) B. Forceful Verbal (i.e., NOGUNTHR, NOWEPTHR, SCAREOFF or SCREAM, GETHELP, and CALLPOL). C. Nonforceful Physical (i.e., RANHIDE and STRUGGLE). D. Nonforceful Verbal (i.e., ARGUE and COPRSTALL)
3.	2-Type TR measure (i.e., physical v. verbal)	Two dichotomous	(1) Physical (i.e., A & C) (2) Verbal (i.e., B & D)
4.	2-Type TR measure (i.e., forceful/nonforceful).	Two dichotomous	(1) Forceful (i.e., A & B) (2) Nonforceful (i.e., C & D).
5.	3-Category Exploratory measure (i.e., physical, verbal, neutral)	Three dichotomous	(1) Physical (i.e., A & C) (2) Verbal (i.e., B & D, except for COPRSTALL) (3) C. Neutral (i.e., COPRSTALL).
6.	Exploratory Forcefulness scale	Single trichotomous	0 'none' 1 'nonforceful SP' (i.e., C & D). 2 'forcefulSP' (i.e., A & B).[1]
7.	Total SP behaviors	Composite score	Sum total of all SP behaviors
8.	Total *forceful* SP behaviors Total *nonforceful* SP behaviors	Composite score	Sum total of: NOWEPATK, NOGUNTHR, NOWEPTHR, SCAREOFF or SCREAM, CALLPOL, and GETHELP. Sum total of: RANHIDE, STRUGGLE + ARGUE + COPRSTALL.
9.	Total *physical* SP behaviors Total *verbal* SP behaviors	Composite score	Sum total of: NOWEPATK, RANHIDE, STRUGGLE. Sum total of: NOGUNTHR, NOWEPTHR, SCAREOFF or SCREAM, GETHELP, CALLPOL, ARGUE, and COPRSTALL.

Notes. 1. When cases could be coded as 1 or 2, the forceful code took precedence.

Appendix C.

Binary regression model for prosecutorial charges using two composite scores for the total number of forceful and nonforceful SP behaviors

Variables	Model 1					
	B	**SE**	**95% CI's**		**OR**	***p***
At least one identified witness	.72	.45	.85	4.95	2.05	.11
Perpetrator used/threatened a weapon/force	-.56	.44	.24	1.36	.57	.21
Victim injury	.24	.37	.61	2.64	1.27	.52
Victim became unconscious	-.13	.46	.36	2.16	.88	.78
Victim participation	.26	.46	.53	3.15	1.29	.57
Suspect confessed	2.23	.55	3.14	27.49	9.30	<.001
Victim credibility concerns	-1.53	.50	.08	.58	.22	.00
Incident location - Private/Semi-Private[1]	.71	.57	.67	6.15	2.03	.21
Victim-perpetrator relationship – Known person	-.45	.67	.17	2.34	.64	.50
Victim mental health/disability condition	-.74	.47	.19	1.20	.48	.12
Victim substance use – Any[1]	-1.22	.43	.13	.68	.30	.00
Victim was a minor	.86	.43	1.02	5.51	2.37	.05
Victim race is non-White[1]	.15	.55	.39	3.40	1.16	.79
Suspect is a minor	-.85	.57	.14	1.31	.43	.14
Suspect race is non-White[1]	.05	.43	.45	2.47	1.05	.91
Total number of *forceful* SP behaviors	.75	.23	1.36	3.32	2.12	<.001
Total number of *nonforceful* SP behaviors	.05	.19	.72	1.52	1.05	.81
Constant	-1.52	1.11	.85	4.95	.22	.17
x^2(df)			89.59 (17) $p < .001$			
Nagelkerke R^2			.40			

Appendix D.
Univariate Statistics for Missing Data before Imputation Procedures

Variable	N/D	%/SD
Perpetrator used/threatened a weapon/force		
Yes	142	53.2
No	122	45.7
Missing	3	1.1
Victim injury		
Yes	88	33.0
No	175	65.5
Missing	4	1.5
Victim became unconscious		
Yes	82	30.7
No	179	67.0
Missing	6	2.2
Victim participation		
Yes	193	72.3
No	49	18.4
Missing	25	9.4
Victim mental health/disability condition		
Yes	57	21.3
No	208	77.9
Missing	2	0.7
Victim substance use		
No	121	45.3
Voluntary use	111	41.6
Involuntary use	23	8.6
Missing	12	4.5
Victim race		
White	206	77.2
Black/African American	14	5.2
Other	20	7.5
Missing	27	10.1
Suspect race		
White	216	46.1
Black/African American	59	12.6
Other	34	7.2
Missing	59	12.6
N/A	101	21.5
Total number of SP behaviors[2]	1.47	1.49
Total number of *physical* SP behaviors	.56	0.76
Total number of *verbal* SP behaviors	.90	0.98

Notes. 1. Variables not included did not have any missing values. 2. Six cases (1.3%) had missing data for self-protective behaviors.

Appendix E.

Binary regression model estimating predictors of ***suspect identification***

Variables	Model 1a						Model 1b					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***
At least one identified witness	1.08	.30	1.63	5.36	2.95	<.001	1.08	.30	1.63	5.36	2.96	<.001
Perpetrator used/threatened a weapon/force	.10	.37	.53	2.31	1.11	.78	.10	.37	.53	2.31	1.11	.78
Victim injury	-.12	.30	.49	1.61	.89	.70	-.12	.30	.49	1.61	.89	.70
Victim became unconscious	-.37	.38	.33	1.47	.69	.34	-.36	.39	.33	1.50	.70	.36
Victim participation	.82	.31	1.23	4.18	2.27	.01	.81	.31	1.22	4.16	2.25	.01
Private/semiprivate incident location	.85	.37	1.13	4.79	2.33	.02	.82	.38	1.09	4.75	2.27	.03
Victim-perpetrator relationship												
Stranger (ref)						<.001						<.001
Other Known Person	2.34	.34	5.32	20.34	10.40	<.001	2.34	.34	5.31	20.33	10.40	<.001
Romantic Partner (current/former)	4.84	.79	26.91	588.84	125.89	<.001	4.83	.79	26.67	584.99	124.91	<.001
Victim mental health/disability condition	.20	.34	.63	2.37	1.22	.55	.19	.34	.62	2.36	1.21	.57
Victim substance use												
No (ref)						.39						.40
Voluntary use	.36	.34	.73	2.82	1.44	.29	.37	.34	.73	2.84	1.44	.29
Involuntary use	.71	.56	.68	6.06	2.04	.20	.70	.56	.68	6.00	2.01	.21
Victim was a minor	.80	.36	1.10	4.54	2.23	.03	.81	.36	1.10	4.60	2.25	.03
Victim race is non-White[1]	-.29	.44	.31	1.78	.75	.51	-.28	.44	.32	1.81	.76	.53
Total number of SP behaviors	.18	.11	.96	1.48	1.19	.11	-	-	-	-	-	-
Total number of *physical* SP behaviors	-	-	-	-	-	-	.12	.23	.72	1.75	1.12	.61
Total number of *verbal* SP behaviors	-	-	-	-	-	-	.22	.19	.87	1.81	1.25	.23
Constant	-3.03	.65	-	-	.05	<.001	-3.02	.65	-	-	.05	<.001
x^2(df)	159.90 (14) $p < .001$						159.99 (15) $p < .001$					
Nagelkerke R^2	.45						.45					

Notes. 1. Measures were collapsed due to small cell counts < 5: victim race (White).

Appendix F.

Binary regression model estimating predictors of law enforcement case referrals including suspect confession

Variables	Model 1a						Model 1b					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***
At least one identified witness	.31	.33	.71	2.63	1.36	.35	.31	.33	.71	2.62	1.36	.36
Perpetrator used/threatened a weapon/force	.26	.37	.62	2.68	1.29	.49	.24	.37	.61	2.64	1.27	.52
Victim injury	-.56	.31	.31	1.05	.57	.07	-.56	.31	.31	1.06	.57	.07
Victim became unconscious	-.29	.39	.35	1.61	.75	.46	-.32	.39	.34	1.58	.73	.42
Victim participation	2.63	.32	7.43	26.14	13.93	<.001	2.66	.33	7.52	26.99	14.25	<.001
Victim credibility concerns	.51	.37	.81	3.44	1.67	.16	.51	.37	.81	3.42	1.67	.16
Private/semiprivate incident location	.31	.47	.54	3.41	1.36	.51	.33	.47	.55	3.49	1.39	.49
Victim-perpetrator relationship												
Stranger (ref)						.01						.01
Other Known Person	1.20	.50	1.24	8.84	3.31	.02	1.19	.50	1.23	8.75	3.28	.02
Romantic Partner (current/former)	1.75	.56	1.90	17.33	5.74	.002	1.76	.56	1.93	17.54	5.81	.00
Victim mental health/disability condition	-.10	.34	.47	1.77	.91	.78	-.08	.34	.47	1.82	.93	.82
Victim substance use – Any[1]	.60	.36	.89	3.72	1.82	.10	.61	.36	.90	3.76	1.84	.09
Victim was a minor	.93	.46	1.02	6.30	2.53	.05	.93	.46	1.02	6.28	2.53	.05
Victim race is non-White[1]	.45	.54	.54	4.54	1.56	.41	.45	.54	.54	4.53	1.56	.41
Suspect is a minor	-.84	.56	.15	1.29	.43	.13	-.84	.56	.14	1.28	.43	.13
Suspect race is non-White[1]	.45	.40	.71	3.47	1.57	.26	.46	.40	.72	3.49	1.58	.26
Suspect confessed	2.89	1.11	2.07	157.85	18.07	.01	2.90	1.11	2.08	159.1 1	18.19	.01
Total number of SP behaviors	.28	.13	1.03	1.69	1.32	.03	-	-	-	-	-	-
Total number of *physical* SP behaviors	-	-	-	-	-	-	.38	.25	.89	2.39	1.46	.13
Total number of *verbal* SP behaviors	-	-	-	-	-	-	.21	.20	.84	1.81	1.23	.28
Constant	-3.27	.81	-	-	.04	<.001	-3.28	.81	-	-	.04	<.001
x^2(df)	128.21 (17) $p < .001$						128.42 (18) $p < .001$					
Nagelkerke R^2	.43						.41					

Notes. 1. Measures were collapsed due to small cell counts < 5: victim race (White).

Appendix G.

Preliminary binary regression models estimating predictors of prosecutorial charges adding victim credibility concerns and confession

Variables	Model 1[1]						Model 2[2]						Model 3[3]					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***
At least one identified witness	.46	.40	.73	3.43	1.58	.25	.64	.42	.83	4.34	1.90	.13	.69	.44	.85	4.72	2.00	.11
Perpetrator used/threatened a weapon/force	-.94	.39	.18	.84	.39	.02	-.84	.40	.20	.95	.43	.04	-.66	.43	.22	1.21	.52	.13
Victim injury	.37	.33	.75	2.79	1.45	.27	.32	.35	.70	2.72	1.38	.36	.37	.36	.71	2.94	1.44	.31
Victim became unconscious	.03	.41	.46	2.33	1.03	.94	-.05	.42	.42	2.19	.95	.91	-.06	.45	.39	2.27	.94	.89
Victim participation	.28	.42	.58	3.02	1.33	.50	.16	.43	.50	2.71	1.17	.71	.25	.45	.53	3.08	1.28	.58
Incident location - Private/Semi-Private[1]	.42	.51	.56	4.09	1.52	.41	.47	.52	.58	4.45	1.60	.37	.59	.56	.60	5.40	1.81	.29
Victim-perpetrator relationship – Known person	-.68	.61	.15	1.67	.51	.26	-.67	.65	.14	1.83	.51	.30	-.64	.67	.14	1.94	.53	.33
Victim mental health/disability condition	-.73	.41	.22	1.07	.48	.07	-.61	.43	.23	1.25	.54	.15	-.62	.46	.22	1.32	.54	.18
Victim substance use – Any	-1.29	.38	.13	.58	.27	<.001	-1.33	.39	.12	.57	.26	<.001	-1.19	.41	.14	.68	.30	.004
Victim was a minor	.94	.39	1.19	5.44	2.55	.02	.89	.41	1.08	5.45	2.42	.03	.86	.43	1.01	5.52	2.36	.048
Victim race is non-White	.73	.51	.77	5.61	2.08	.15	.32	.54	.48	3.92	1.37	.55	.14	.54	.40	3.33	1.15	.80
Suspect is a minor	-.55	.47	.23	1.44	.58	.24	-.36	.49	.27	1.83	.70	.47	-.87	.57	.14	1.26	.42	.12
Suspect race is non-White	-.02	.40	.45	2.16	.98	.96	.04	.42	.45	2.39	1.04	.92	.15	.43	.50	2.71	1.17	.72
Total number of SP behaviors	.26	.12	1.02	1.65	1.30	.03	.28	.13	1.03	1.70	1.32	.03	.35	.13	1.09	1.83	1.41	.01
Victim credibility concerns	-	-	-	-	-	-	-1.68	.49	.07	.49	.19	<.001	.25	.45	.53	3.08	1.28	.58
Suspect confessed	-	-	-	-	-	-	-	-	-	-	-	-	2.33	.55	3.49	30.49	10.32	<.001
Constant	-.90	.97	-	-	.41	.35	-.73	1.04	-	-	.48	.48	-1.47	1.10	-	-	.23	.18
x^2(df)	51.01 (15) p <.001						65.71 (16) p <.001						84.57 (16) p <.001					
Nagelkerke R^2	.25						.31						.38					
AIC	308.72						295.7						277.14					

Notes. 1. Model excludes victim credibility concerns and suspect confessed variables. 2. Model includes victim credibility concerns. 3. Model includes victim credibility concerns and suspect confessed.

Appendix H.

Binary regression model for case conviction

Variables	Model 1a						Model 1b					
	B	**SE**	**95% CI's**		**OR**	***p***	**B**	**SE**	**LL**	**UL**	**OR**	***p***
Perpetrator used/threatened a weapon/force	.05	.81	.21	5.15	1.05	.95	.04	.81	.21	5.11	1.04	.96
Victim injury	.18	.70	.30	4.72	1.20	.80	-.02	.75	.23	4.26	.98	.98
Suspect confessed	.05	.78	.23	4.92	1.06	.94	.11	.79	.24	5.23	1.12	.89
Victim substance use - Any	-.10	.68	.24	3.45	.91	.89	-.11	.69	.23	3.43	.90	.87
Victim was a minor	1.33	.76	.86	16.70	3.78	.08	1.38	.76	.90	17.68	3.99	.07
Total number of SP behaviors	-.32	.24	.45	1.17	.73	.19	-	-	-	-	-	-
Total number of *physical* SP behaviors	-	-	-	-	-	-	-.54	.38	.27	1.24	.58	.16
Total number of *verbal* SP behaviors	-	-	-	-	-	-	-.08	.40	.42	2.03	.92	.84
Constant	1.27	.82	-	-	3.55	.12	1.23	.82	-	-	3.41	.14
x^2(df)	11.11 (6) p = .09						11.67 (7) p = .11					
Nagelkerke R^2	.19						.20					

Notes. 1. Comparison group (no substance use).