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DECISION-MAKING FOLLOWING SEXUAL ASSAULT: REPORTING DECISIONS  
AND EXPOSURE TO THE CRIMINAL JUSTICE SYSTEM

by

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## Abstract

Violent crimes represent significant costs to society and survivors; costs which include mental health conditions which may emerge afterward. Victims of sexual assault are at particularly heightened risk for developing posttraumatic stress disorder (PTSD) (Breslau, Davis, Andreski, & Peterson, 1991). Although Crime Victims' Compensation (CVC) is available to assist with healthcare costs for some individuals who report the event to police (NACVCB, 2009), many crimes are not reported. Theories of crime-reporting behavior suggest that victims decide whether to report crimes to police through the use of a "cost-benefit analysis" (Gottfredson & Gottfredson, 1988, p. 25). Little research, however, has been conducted on how emotional and cognitive sequelae of violent crime affect choices made in the aftermath of a sexual assault. Further, some authors suggest that survivors of sexual assault may experience worsened PTSD symptoms due to participation in the legal system (Campbell & Raja, 1999; Campbell, Wasco, Ahrens, Sefl, & Barnes, 2001; Orth & Maercker, 2004). Yet, this existing body of research lacks comparisons of those who report the crime to police to those who do not, and does not account for post-event PTSD symptom severity. This study collected survey data from 834 male and female participants who reported experiencing an unwanted or forced sexual event. Researchers found that, in addition to assault characteristics and victim perceptions of the event, symptoms of PTSD accounted for a significant portion of the variance in reporting behavior. Specifically, avoidance symptoms decreased report likelihood, while re-experiencing and hyperarousal symptoms increased the probability of police notification. As greater avoidance symptom severity is thought to be related to chronic and severe cases of PTSD (Foa & Cahill, 2001), it is notable that these symptoms may also reduce the likelihood of police notification. In particular, these results suggest

that those with perhaps the greatest need for benefits to cover the cost of future mental health care may also be less likely to satisfy CVC eligibility criteria (NACVCB, 2009). Further analyses failed to uncover evidence that participation in various legal system stages contributes to future levels of PTSD symptomatology when after-event symptom levels were accounted for.

### **Decision-making following sexual assault: Reporting decisions and exposure to the criminal justice system.**

The National Crime Victimization Survey (NCVS) estimates that millions of violent crimes happen each year. These violent crimes have detrimental effects on the physical and mental health of victims, and are associated with large costs to victims and society. In particular, sexual assault has been found to have particularly damaging mental health consequences (Frieze, Hymer, & Greenberg, 1987; McCann, Sakheim, & Abrahamson, 1988). A substantial portion of these crimes go unreported each year despite the fact that it is often a requirement for crimes to be reported to police in order for victims to be eligible for Crime Victims Compensation (CVC) benefits. These benefits are important provisions for victims of crime, as they may act to offset institutional, societal, and individual costs of victimization. Numerous studies have been conducted to determine what variables contribute to the likelihood of crime reporting, and theoretical models have been put forward to account for factors which influence this decision. Very few studies, however, have examined the psychological factors (e.g. depressive or post-trauma symptomology) involved in the decision of whether or not to report a crime. Notably, no known studies have explored the impact of psychological factors in the reporting of sexual assault.

#### **Sexual Assault in the United States**

Although current literature shows an increasing likelihood of police notification in cases of sexual assault (Baumer & Lauritsen, 2010), and particularly for events occurring after 1980 (Wolitzky-Taylor et al., 2011), reporting rates are still low. According to the United States Department of Justice, Bureau of Justice Statistics (USDOJ), there were an average of 141,000 rapes and attempted rapes, and over 80,000 other sexual assaults each

year between 2004 and 2006 (USDOJ, 2006<sub>A</sub>; 2006<sub>B</sub>; 2008). Estimates provided by the National Crime Victimization Survey (NCVS) suggest that only about 43 percent of rapes or attempted rapes, and just 36 percent of other sexual assaults were reported to police during this period (USDOJ, 2006<sub>A</sub>; 2006<sub>B</sub>; 2008).

Although the information gathered by the NCVS includes details regarding reasons crimes are reported or not reported to police, the NCVS is limited as to the research questions it is able to answer. It is a system primarily designed for tracking crime trends and not intended to test specific hypotheses about crime reporting behavior. In particular, elements regarding victimization and decisions to report a crime to police which are absent from the NCVS include psychological factors which may emerge post-victimization, and may influence a survivor's ability or willingness to report their crime to police.

### **The effects of victimization on survivors of sexual assault**

Victims of sexual assault may suffer a variety of difficulties following their victimization. Mental health problems which emerge following victimization may cause substantial, highly variable difficulties. Survivors may develop significant and detrimental post-traumatic symptomology shortly after their victimization (American Psychological Association [APA], 2000). Indeed, research comparing victims of crime to non-victims suggests that those who have been victimized have greater levels of avoidance behaviors, fear of crime, "phobic anxiety," (Norris & Kaniasty, 1994, p. 540) hostility, somatization, and depressive symptomology (Norris & Kaniasty, 1994). These types of reactions are particularly prevalent in victims of sexual assault (Frieze et al., 1987; McCann et al., 1988). In addition, although these difficulties may be somewhat reduced by the passage of time, further improvements without targeted intervention are

often not observed after the first few months have passed (Norris & Kaniasty, 1994; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992).

The cognitive theory of PTSD suggests that the disorder results from cognitive appraisals related to perceived threat (Ehlers & Clark, 2000). More specifically, although the trauma happened in the past, individuals who develop PTSD have processed the traumatic event in such a way that they continue to believe a current threat exists. This occurs due to how victims appraise the trauma and the resulting consequences, as well as how they integrate the trauma into their other memory structures. Ehlers and Clark (2000) suggested that these cognitions can be related to either a perception of the external environment as dangerous or a perception of an internal threat, such as being incapable of protecting oneself in the event a dangerous situation arises. These beliefs may be maladaptive in some cases, as they may affect how the victim views and emotionally responds to their traumatic experience (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999), and may determine whether or not PTSD develops (Ehlers & Clark, 2000). The theory assumes that individuals are aware of and able to express these maladaptive beliefs and cognitions, and because these beliefs and cognitions are readily available to the individual, they therefore may be challenged in discourse. This process of identifying and challenging maladaptive thoughts and beliefs is the practice in some forms of trauma-focused psychotherapy (Resick & Schnicke, 1992).

It is noted that many cases of victimization do not result in the presence of PTSD. Indeed, within months following victimization, many survivors of sexual assault would not meet criteria for the diagnosis, even if they previously exhibited symptoms similar to PTSD (APA, 2000). For those who do go on to develop PTSD, the diagnosis is often accompanied by other comorbid conditions. This is expected, as it is widely accepted in



psychology that psychological conditions stem from general underlying vulnerabilities (see Zuckerman, 1999, for a review). For PTSD, comorbid conditions may include depression (APA, 2000), alcohol abuse or dependence (Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Kushner, Sher, & Beitman, 1990), and a variety of personality disorders (e.g. avoidant, paranoid) (Bollinger, Riggs, Blake, & Ruzek, 2000). Clearly, exposure to trauma and crime may result in substantial psychological impacts on victims.

Beyond the psychologically diagnostic sequelae of criminal victimization, there are numerous other problems which may develop as a result. Those who develop various mental health conditions may suffer from a reduced overall quality of life (Seedat, Lochner, Vythilingum, & Stein, 2006). This reduced quality of life may be related directly to the mental health conditions of the victim, or may emerge secondary to other problems common in victims with PTSD or other mental health conditions. Specifically, victims of crime who develop PTSD often have difficulties which interfere with their normal social functioning including a reduced level of enjoyment in usual social activities or a general feeling of being socially isolated or distant from others (APA, 2000).

Further, occupational or educational problems can also result from victimization. In particular, crime victims who develop symptoms of posttraumatic stress or other mental health problems as a result of the crime may experience problems related to work or education due to a reduced ability to concentrate and lower motivation to perform work or school responsibilities (APA, 2000; Taylor, Wald, & Asmundson, 2006). Additionally, the interference caused by these difficulties may result in the survivor having to take a leave of absence from their educational or work setting, which could potentially cause financial or other difficulties.

Other financial consequences may result from victimization as well. Medical costs for victimization, as estimated by Miller, Cohen, and Wiersema (1996), are substantial. In cases of sexual assault or rape, the authors estimated that the medical cost for these victims exceeds four billion dollars annually (1993 dollars), before accounting for the cost of the loss of other tangibles or the impacts on quality of life. Clearly, the cost of victimization is substantial for both the victim and for society.

### **Involvement in victims' services**

With the myriad ways in which survivors may be impacted by violent crime, it is important they be provided with access to services in order to curb potential negative effects of victimization. However, if victims elect not to report their crime to authorities, they are unable to receive victim services from many programs (Gottfredson & Gottfredson, 1980; Skogan, 1984). This may seem inconsequential since some research suggests that victim service agencies are not effective in reducing the distress experienced by survivors of crime (Coates & Winston, 1983). More in depth examinations of the utility of victim services have found that these effects may be better accounted for by the low rate at which victims seek out and receive treatment for mental health conditions. (Golding, Stein, Siegle, Burnam & Sorenson, 1988; Miller et al., 1996). In light of this, perhaps what is needed is for victim service agencies to place a larger emphasis on referring survivors of crime for mental health care when these services are deemed necessary. Indeed, research on available treatments for PTSD has shown that current interventions are able to reduce up to 70 percent of symptoms experienced by survivors of trauma (Resick, 2001).

All states and some U.S. territories now offer Crime Victims Compensation (CVC) programs which, among other benefits, often cover the costs of medical and mental

health services needed by victims of crime. Despite the widespread availability of these programs, most states have limits of eligibility for services. One of these limitations regards the reporting status of a crime. CVC programs do not compensate victims of crime for services unless the victim reports the crime to authorities. Additionally, most states have limitations on the amount of time which may pass between the occurrence of a crime and the time of the crime report. Overall, the amount of time which is allowed to pass between when a crime occurred and the time of the report is fairly brief. Ranges of time allowed are between a maximum of 24 hours, and an unlimited amount of time. Yet only two of 53 states and territories (California and Vermont) allow an unlimited amount of time (3.7 percent), while the vast majority allow for less than a week to pass before the crime must be reported (79.2 percent). Most commonly, a report is required within 72 hours (24 of 53 states and territories; 45.3 percent) (National Association of Crime Victims Compensation Boards [NACVCB], 2009).

The above limitations are problematic, as victims of crime who are experiencing significant emotional disturbances afterward, particularly individuals with avoidance symptoms, may not report the event within these time windows due to the acute distress they are experiencing. Those with heightened emotional distress may specifically avoid thoughts, feelings, and conversations which would remind them of the event (APA, 2000), and given that the act of reporting the crime to authorities serves as a reminder of the event itself, the presence of these symptoms might prevent this report from occurring. Additionally, symptoms of PTSD sometimes do not develop until several months after a crime (APA, 2000). Indeed, even if an individual is suffering from significant psychological distress following a crime, as would be expected for many survivors of crime (Foa & Cahill, 2001), most who experience these reactions see a later reduction in

the reexperiencing, avoidance, and hyperarousal symptoms associated with trauma.

However, some individuals do not experience a natural reduction in these symptoms of distress, and are more likely to eventually develop PTSD. With these considerations in mind, it is clear that survivors may not feel the need to pursue mental health services until a substantial period of time has passed since the crime occurred. In these cases, they may desire services which would normally be covered by CVC, but would be unable to receive these services if they neglected to notify police of the event early afterward.

### **Detrimental outcomes for society**

Outside of the effects upon victims, crime can have a negative impact on the larger society as well; in particular, a detrimental financial burden. At the individual level (as mentioned above), victims of crime may experience occupational problems which may impact their wages and quality of life (APA, 2000; Taylor et al., 2006). These workplace problems may have a financial impact on employers as well, since employees suffering from work-interfering problems cause a loss of workplace productivity for employers (Taylor et al., 2006; Marciniak, Lage, Landbloom, Dunayevich, & Bowman, 2004).

Further research has been conducted to estimate the direct and indirect costs of anxiety disorders, with a total estimated annual cost between 42.3 and 46.6 billion dollars each year (Greenberg et al. 1999; DuPont, Rice, Miller, & Shiraki, 1996), including medical costs (direct costs) and lost productivity (indirect costs). Available literature is fairly limited as to costs specifically linked to PTSD, with only one known study to date having examined the costs of PTSD alone. In this study, Marciniak and colleagues (2005) collected data from a claims database which recorded insurance payments for medical and mental health costs. The results suggested that a diagnosis of PTSD was associated with higher costs than any of the other anxiety disorders examined (i.e. Generalized

Anxiety Disorder [GAD], Panic disorder, or another anxiety disorder). A diagnosis of PTSD resulted in a nearly 4,000 dollar increase in total medical costs. This cost far exceeded those associated with other anxiety disorders, as GAD, Panic disorder, and separate anxiety disorders (aggregated) were associated with total medical cost increases between approximately 1,600 and 2,100 dollars. These findings illustrate that the societal costs may be particularly high in those diagnosed with PTSD.

Although the individual and societal costs of crime and resulting problems such as PTSD may not be directly related to the reporting of crime to police, there may be an indirect relationship. As discussed above, if individuals report their crime to police promptly, they are often able to receive mental health services for conditions related to their victimization. For survivors with PTSD who participate in mental health services following a victimization, treatments are available which may reduce their posttraumatic symptomatology by up to 70 percent (Resick, 2001). Presumably, having acute or longstanding anxiety and PTSD symptoms treated and reduced would lead to a lower long-term cost to the victim, and therefore a lower long-term cost to society. Conversely, for those individuals who do not report their crime to authorities, and who are therefore ineligible for CVC benefits to cover the cost of mental health and medical treatment, costs may continue to build with time. They may wish to receive treatment yet be unable to afford it, and the result may be a chronic mental health condition (e.g. PTSD), with direct and indirect individual and societal costs which may continue to accumulate if treatment is not provided or sought.

### **Theories of crime reporting behavior**

The rational choice model or “cost-benefit analysis” (Gottfredson & Gottfredson, 1988, p. 25) detailed by Gottfredson and Gottfredson (1988) suggests a number of

possible reasons for which crime survivors may call the police. They may call law enforcement for protection due to a desire to prevent crime victimization in the future or for help to cease ongoing victimizations. Secondly, the crime survivor may desire some sort of reprisal or justice in their case. They may feel that the offender who victimized them deserves to be punished for their crimes (Gottfredson & Gottfredson, 1988). In spite of these motivations, crime survivors may still elect to not report the crime if they perceive it to be “not important enough” (Hindelang and Gottfredson, 1976, p. 67).

Further, the authors suggest that victims of crime may report their crime due to a desire to protect others from victimization; the decision to report may be viewed as a civic duty through which the crime survivor is charged with the responsibility of reporting their crime as a personal “obligation” (Gottfredson & Gottfredson, 1988, p. 25). Although the type of crime may affect which factors are most important, Gottfredson and Gottfredson (1988) argue that these reasons for calling the police apply to all types of crime. It is also noted that people’s perceptions of law enforcement may play a critical role. As reported by Hindelang and Gottfredson (1976), if crime victims do not believe that something can be done about their victimization or if they harbor low expectations as to the ability of local law enforcement agencies to respond to crime and prevent it, they may be less likely to report their victimization.

In addition to the benefits of calling the police, Gottfredson and Gottfredson (1988) and others have noted a variety of potential costs which would impact the likelihood of a crime victim making a report. These cost factors involve how the victim will be perceived by others (Bachman, 1998; Gottfredson & Gottfredson, 1988), their relationship with the offender (Gottfredson & Gottfredson, 1988; Pagelow, 1984), fear,

victim behavior at the time of the offense (Gottfredson & Gottfredson, 1988), and opportunity costs (Gottfredson & Gottfredson, 1988; Greenberg & Ruback, 1985).

With regard to how the crime will be perceived by others, existing research suggests that some victims may think of their victimization as a “private matter” (Hindelang & Gottfredson, 1976, p. 67). It has been found that victims of sexual assault may have concern that others will become aware of their victimization, and that reporting the crime therefore presents the possibility of embarrassment or stigma (Bachman, 1998; Wolitzky-Taylor et al., 2011). Further, those who are the victim of a crime may make different decisions about whether or not to report their victimization depending upon who the offender is. If the offender is known to them, the victim may have a desire to or vested interest in protecting the perpetrator. Although there may be emotional reasons for doing so due to the victim’s attachment to the perpetrator (Felson, Messner, Hoskin, & Deane, 2002) (as may be the case in sexual assault), there may also be practical reasons for not reporting a victimization to police. For example, if the offender is the spouse of the victim, the victim may desire to avoid reporting in order to protect their children (if applicable), or due to financial dependence (Pagelow, 1984). Conversely, emerging literature focused on the reporting of stalking behavior suggests that stalking crimes by intimate partners may lead to a greater likelihood of police notification than those committed by non-intimate acquaintances (Reyns & Englebrecht, 2010). Gottfredson and Gottfredson (1988) further listed fear of reprisals as an additional reason why victims may not report their crimes to authorities. However, as noted by Greenberg and Ruback (1985), research investigations have not shown a significant tendency of participants to endorse fear of reprisal as a deterrent to crime reporting. In fact, some authors have suggested that greater fear may increase the likelihood that crime victims will notify

police after victimization (Singer, 1988), and current literature continues to find higher reporting rates in those who endorse greater levels of fear (Wolitzky-Taylor et al., 2011). Additionally, Gottfredson and Gottfredson (1988) suggest that victims who are engaged in illegal activity at the time of their victimization (e.g. using illicit drugs) may be less likely to report their crimes to police. They may believe that making a report to police will result in a cost to them (due to their engagement in illegal activities) which outweighs the benefit. Finally, the authors posit that reporting the crime to police may result in various opportunity costs which victims may be inclined to avoid. For example, if they report their crime to police, they may be required to testify in court or otherwise forced to take time away from work or other activities (Gottfredson & Gottfredson, 1988; Greenberg & Ruback, 1985). Indeed these cost factors are relevant to cases of sexual assault, and underscore survivors' needs for support following victimization and crime reporting.

Overall, although the “cost-benefit” model of Gottfredson and Gottfredson (1988, p. 25) and the accompanying literature provides a variety of examples of what costs and benefits are weighed when crime victims make the decision to report or not report their victimization, a number of concerns arise from proposed models of how reporting decisions are made. Generally, the notion that a rational choice is made in reporting decisions assumes that victims of crime are able to fully examine their options, the cost and benefit of each possibility, and enact a thoughtfully constructed response following victimization. However, victims of crime clearly are in a position whereby they may have to make this “cost-benefit analysis” (Gottfredson & Gottfredson, 1988, p. 25) while they are experiencing a higher than usual amount of stress (Greenberg & Ruback, 1985). When people are under stress and are experiencing heightened arousal, their attention



may become narrowed (Easterbrook, 1959), and as a result of this narrowed attention, victims of crime may not consider all of their response options, thus limiting their ability to engage in careful consideration of their options. Instead of making the best choice, they may instead simply make a choice which is deemed acceptable at that time. In the context of this discussion, they may for example decide not to report a crime to police in order to avoid thinking or talking about the crime, though may later regret this decision. As suggested by Janis and Mann (1977), as victim stress increases, so does the likelihood that they will settle for a response which seems reasonable at the time of the victimization instead of fully evaluating and choosing a response which may serve them best in the long term. Recent research supports this claim, showing that when individuals are experiencing heightened emotional arousal, this arousal may affect their normal information processing strategies (Forgas, 2001). Clearly, these suggestions indicate that the rational choice framework of Gottfredson and Gottfredson (1988) may overestimate victim's abilities to make rational choices following victimization, and may be incomplete without considerations of arousal and affect-driven interference in their ability to make thoughtful choices. This is the point at which mental health services are especially needed in order to help the person decrease arousal, consider alternatives, and make rational choices.

Recent empirical investigations suggest that at least some aspects of the theoretical framework put forth by a "cost-benefit analysis" (Gottfredson & Gottfredson, 1988, p. 25) model may be accurate. In studies of rape and domestic violence victims, commonly cited reasons for not reporting the crime to police included (1) viewing the crime as a private matter, (2) fear of reprisal or of future attacks, and (3) viewing the crime as trivial or as not important to police (Bachman, 1998; Felson et al., 2002). Conversely, the same

studies found the most common reasons for calling the police to be (1) because it was a crime, (2) desire for protection, and (3) to prevent future crimes by the offender (Bachman, 1998; Felson et al., 2002). A number of these have also been cited by the NCVS as reasons surrounding the decision of whether or not to notify police (USDOJ, 2006<sub>A</sub>; 2006<sub>B</sub>; 2008).

**Psychological Theories.** From a psychological perspective, a “cost-benefit analysis” (Gottfredson & Gottfredson, 1988, p. 25) model may be explained through reinforcement contingencies. Generally, although reinforcers are not absolutely necessary for learning and performance of a behavior (as in crime reporting behavior) (Wortman et al., 1999), Bandura (1977) argues that if a benefit (i.e. reinforcer) is present, the likelihood of a specific behavior being performed is significantly increased. Thus, with respect to crime reporting, survivors of crime would be more likely to report if they perceived there to be a potential benefit (i.e. reinforcer), and if adverse outcomes (i.e. punishers) were unlikely or were outweighed by the benefits. This theory however fails to address affective influences on crime reporting.

From an emotion regulation perspective, crime victims, like other individuals, work to regulate both positive and negative emotions. Though both types of emotions are subject to this regulation, individuals are more likely to regulate those emotions which are negative. Generally, the goal for individuals in regulating negative emotions is to reduce the level of negative emotionality (Gross & Thompson, 2007). An example of regulating negative emotions is the tendency of individuals to avert their attention when confronted with upsetting stimuli. This is particularly relevant in PTSD, as avoidance, one of the three clusters of symptoms of the disorder, is essentially the tendency of the individual to attempt to regulate or avoid negative emotions. Crime victims who develop

PTSD are therefore likely to avoid reminders, thoughts, feelings, and conversations about the crime (APA, 2000), as by avoiding these things, they are able to regulate their immediate negative emotions more effectively. Yet, the avoidance of the immediate negative emotions associated with the trauma may be damaging to victims of crime. Theories of PTSD suggest that the disorder is more likely to develop in those victims who do not adequately process the traumatic memory (Ehlers & Clark, 2000; Foa & Cahill, 2001). Though it has not been empirically investigated, crime victims suffering from posttraumatic stress reactions may therefore be less likely to report their crimes to police, as they may desire to avoid the negative emotions associated with thinking or talking about the assault. Thus, the decisions made by crime victims may be influenced by emotional processes which may interfere with their ability to fully engage in thoughtful decision-making or in a “cost-benefit analysis” (Gottfredson & Gottfredson, 1988, p. 25).

**Cognitive and affective influences on crime reporting behavior.** Although criminal justice literature acknowledges the influence of cognitive elements in how decisions are made to notify police of a crime, the rational-choice or “cost-benefit analysis” models (Gottfredson & Gottfredson, 1988, p. 25) (Greenberg & Ruback, 1985) do not take into account factors which may alter the ability of crime survivors to fully evaluate the costs and benefits of reporting.

As discussed by Brewin and Holmes (2003), survivors of crime often experience distressing cognitions and emotions following their victimization. They may blame themselves for their victimization, and in some cases, this tendency to blame themselves may be related to worse mental health outcomes and higher levels of distress (Breitenbecher, 2006; Walsh & Bruce, 2011). They may additionally have problems

concentrating and making decisions. As indicated in Keinan's (1987) study of 101 undergraduate students, individuals under stress often may make decisions without considering all possible options systematically. Indeed, the level of emotional arousal being experienced may affect how individuals perceive events, including their observations, interpretations, and ultimately their choice of response (Niedenthal & Kitayama, 1994). Thus, theories positing that victims of crime make decisions based on a "cost-benefit analysis" (Gottfredson & Gottfredson, 1988, p. 25) are especially problematic for victims who experience typical traumatic reactions following a violent crime, as they may be required to make choices and decisions about reporting a crime to police while they are under a high amount of stress (Greenberg & Ruback, 1985). In fact, some authors suggest that when intense emotions are present (as may be the case following a violent victimization), those emotions may "automatically activate well-learned behavioral responses with little or no mediating cognitive activity" (Greenberg & Beach, 2004, p. 178). Indeed, when confronted with stress, a number of biological responses occur. Referred to by Cannon (1914) as involving "flight or conflict or struggle to be free" (p. 366), these reactions include changes in the peripheral and central nervous system which automatically prepare the individual to react to the stressful situation (Resick, 2001). This suggestion is particularly problematic from a rational choice framework as it posits that there is no rationale to choices which are made, other than that those choices have presumably been activated due to their past reinforcement. Despite this, there is little research on how coping style or emotional and cognitive posttraumatic reactions may relate to crime reporting behavior or other victim decisions. Further, although there is a relatively small literature on how these elements relate to

victim decisions in cases involving property crimes, research examining these reactions in victims of violent crime is largely absent.

Greenberg and Beach (2004) collected information from adult victims of burglary and theft using computer assisted telephone interviews. They investigated participants' immediate emotional reactions following discovery of the crime by questioning victims about their feelings, concerns, perceived seriousness of the offense, and other cognitions. The decision to call the police, in addition to being affected by characteristics of the event, was impacted by their reported level of fear and their perception that the outcome of the crime "could have been worse" (p. 181). Specifically, those who were more scared and those who felt that the crime "could have been worse" (p. 181) were more likely to report the crime to police. Although the results were collected retrospectively, thus requiring victims to recall their level of distress following a prior victimization, the authors additionally interviewed persons whom the crime victim reported that they had talked to about the crime soon afterward to obtain verification of the participants' distress ratings. These companion ratings were significantly correlated with those of the crime victims, suggesting that data collection through retrospective victim reports may be a viable method for future research.

Additional studies have examined the impact of crime victims' anger on their decision to report crimes to police. Greenberg, Wilson, Ruback, and Mills (1979) collected data from 126 participants through an advertisement which asked for volunteers for research on "work efficiency" (p. 365). While participants completed the research task, they were the victim of a staged fraudulent act by a confederate participant which impacted their payment from the research study. Further, upon discovery of this event by a confederate member of the research staff, a confederate participant modeled one of

three levels of anger and offered one of three forms of advice about what action the participant should take. The confederate staff member of the research agency then verbalized one of several standardized phrases to suggest that the participant call the police. The authors found that victim's level of anger while they were at the research agency was predictive of whether or not they called police. Specifically, those who were rated moderate or high in their level of anger were more likely to call police when prompted when compared to those who were lower on the measure of anger.

Although the aforementioned topics involving psychological processes have supported the possibility that cognitive and affective elements may influence the decision of a crime survivor to notify police, a number of additional psychological variables have not been investigated with regard to their effect on crime reporting behavior. As noted above, depression is commonly comorbid with posttraumatic stress disorder in victims of sexual assault. As a result, the characteristics of depression may also play a role in whether or not crimes are reported to police. Those victims with depressive symptoms may suffer from a lower than normal ability to process information and concentrate (APA, 2000), which may interfere with their ability to weigh the costs and benefits of reporting the crime. Further, they might suffer from indecisiveness (APA, 2000), and may therefore struggle to decide whether or not to report their crime. As is common in crime survivors with PTSD, individuals with depression may experience inappropriate guilt surrounding their victimization or other aspects of their life (APA, 2000), and therefore may feel that the crime was justified or somehow deserved. Beyond feelings of guilt, individuals with depression are more likely to have a sense of worthlessness or low self-esteem (APA, 2000). This sense of worthlessness may contribute to a feeling that they are unimportant, and perhaps, that their victimization is therefore trivial.

Aside from the affective and cognitive elements already discussed, the ways in which victims perceive the criminal justice system and their likelihood of success with their case may impact the probability that their crime will be reported to police. If we imagine that victims, despite the cognitive and affective limitations discussed above, are interested in pursuing the course of action which would provide them with the most benefit or sense of justice, then if they do not perceive beneficial results to be likely, they may be less likely to report it. For example, if victims do not believe that their case would be successful in prosecution of an offender, as in cases where they cannot identify the offender, feel that there may not be enough evidence to show guilt, or perceive the potential punishment as unsatisfactory, they will presumably be less likely to call the police to report the crime.

Some of these victim judgments reflect a “nothing could be done” (Hindelang & Gottfredson, 1976, p. 67) cognitive process. However, in some ways, these hopeless cognitions may carry some aspect of truth. Indeed, by examining recent crime statistics, we are able to see that rates of arrest and conviction are relatively low for a number of violent crimes. According to information from the Federal Bureau of Investigation (FBI), of crimes known to police in 2005, approximately 40 percent of forcible rapes resulted in arrest (FBI, 2006). As the rates of arrest are relatively low, the benefit which a victim may foresee may be diminished. Further, as reviewed by Walsh & Bruce (2011), the Bureau of Justice Statistics reported that for those arrested for this crime in the year 2004, prosecutions were pursued in just over 40 percent of those cases, though the vast majority of those resulted in conviction (USDOJ, 2006<sub>C</sub>). Overall, when accounting for cases that were dismissed or dropped during various legal stages, close to 90 percent of these cases do not end in conviction (FBI, 2006; USDOJ, 2006<sub>C</sub>).

Aside from the possible perception that cases may have a low probability of success, victims alternatively may be unsatisfied with the potential punishments available through the United States criminal justice system. Some researchers have suggested that a “restorative justice” (Sherman & Strang, 2007, p. 8) model of punishment may be more attractive to victims of crime. Victims may desire justice in the form of reparations or an apology as opposed to traditional criminal justice. In a review of available literature, Sherman and Strang (2007) discussed these models, and how they relate to victim distress and victim satisfaction with the justice system. After being tested in areas of Australia, the United Kingdom, and the United States, results showed that victims of crime were less angry at the justice process, held a lesser desire to harm the offender, and were more satisfied with the outcome than were victims in cases involving traditional methods (McGarrell, Olivares, Crawford, & Kroovand, 2000; Sherman et al., 2005; Strang, 2002; as cited in Sherman & Strang, 2007). Additionally, participation in the “restorative justice” (Sherman & Strang, 2007, p. 8) process was related to fewer symptoms of posttraumatic stress when compared to those who elected for traditional criminal justice methods (Angel, 2005; as cited in Sherman & Strang, 2007). These results indicate that victims may be dissatisfied with the traditional criminal justice system in general, thus possibly impacting the likelihood that a crime would be reported.

#### **After the report: Retraumatization?**

Beyond the problems with the criminal justice system mentioned above, many authors have additionally suggested that participating in the criminal justice process may evoke strong emotional reactions in victims. As discussed by Orth and Maercker (2004), “retraumatization” (p. 213) is conceptualized as a process through which the symptoms of posttraumatic stress which may follow victimization would somehow be made worse.



Further, research involving mental health professionals has suggested that many believe participation in the legal system process to be harmful to victims of crime (Campbell & Raja, 1999; Campbell, Wasco, Ahrens, Sefl, & Barnes, 2001), particularly if their involvement with the legal system is not met with prosecutorial success (Campbell et al., 2001).

Some researchers have posited that aside from general participation in the legal system, victims of sexual assault may experience worsened levels of distress related to their involvement with various services or agencies (e.g. medical care, law enforcement, other legal processes or personnel, or mental health care), possibly experiencing a figurative “second rape” as a result (Madigan & Gamble, 1991, p. 5) (Bohmer & Blumberg, 1975; Campbell, 2008; Campbell, et al., 1999). Further, some survivors of these crimes may have concerns about worsening their levels of distress, and may avoid notifying police about the event for that reason (Cluss, Boughton, Frank, Stewart, & West, 1983). However, despite the potential for greater distress as a result of involvement with some personnel, many of those who experience these crimes indicate having positive reactions to their contact with mental health care providers (Campbell, 1998; Campbell, et al., 2001). Indeed this underscores the need for victims to have access to psychological services.

There is little empirical evidence to support the notion that victim participation in the criminal justice process results in the “retraumatization” (Orth & Maercker, 2004, p. 213), defined by Orth and Maercker (2004) as a “significant increase in the frequency of posttraumatic stress reactions to the original trauma, thus an exacerbation of PTSD” (p. 213) of crime survivors. Frazier and Haney (1996) collected information from 90 sexual assault victims who had reported their crime to police. The results of this examination

illustrated that the attitudes of participants toward either the police or the legal system were not significantly related to their level of PTSD symptomology. Further, case outcomes also showed no relationship to symptom severity. Additionally, in a study of 137 victims of assault (sexual and non-sexual), Orth and Maercker (2004) achieved null results. In their study, the authors analyzed the long term and short term effects of participation in the legal system. Generally, participation in the legal system did not result in increases in posttraumatic symptom frequency, either in initial weeks following a trial or several years after a trial concludes. The authors instead found other variables which contributed to the occurrence of some PTSD symptomology, including (1) education, (2) initial emotional reaction, and (3) physical harm.

Although these studies are illustrative of the possible absence of worsened trauma-related symptoms related to participation in the criminal justice system, there are a number of weaknesses in these trials. The study by Orth and Maercker (2004) recruited individuals who were involved with a victim assistance association. Thus, all participants in the trial were those who were already involved with the criminal justice system, therefore not allowing for comparison between those who had reported their crime and those who had not. This was also true of the participants recruited by Frazier and Haney (1996). Additionally, Orth and Maercker (2004) did not include those cases which did not involve a trial. As such, the sample was limited further. Beyond these limitations, it is also notable that types of victimization were heterogeneous. The sample included both victims of sexual and other crimes (i.e. bodily harm, robbery, deprivation of liberty), thus making it difficult to determine if the “retraumatization” (Orth & Maercker, 2004, p. 213) hypothesis may apply differentially to different groups. Further, as the data were collected in Germany, it is unclear how these results may generalize to other areas. Thus,

though some studies have provided initial evidence that victim distress may not be worsened through legal system involvement, additional research is needed to examine PTSD symptomology differences between those who report their crime and those who do not.

While the above discussion has illustrated the importance of affective and cognitive variables in victims' decisions to notify police following a criminal victimization, little research has been conducted to more fully understand their impact on victims of violent crime. In particular, the ways in which affective arousal may affect cognitive processing and the ability to make rational choices in victims of crime is an area in need of future research.

Further, although this discussion has focused primarily on how the presence of mental health difficulties may impact the likelihood that an individual would report a crime to police, it is additionally noted that a *lack* of mental health difficulties may also affect the likelihood that police would be notified of a crime. Theoretically, if a crime survivor is not suffering from mental health difficulties, they may be more likely to report a crime simply because they are not experiencing symptoms which may hinder their ability to do so (e.g. avoidance, fear). Alternatively, the denial, avoidance, and dissociative elements which often accompany victimization may make it difficult for victims of crime to acknowledge and recognize distress. It is additionally possible that the lack of significant psychological distress following victimization may result in beliefs that the crime was "not important enough" (Hindelang & Gottfredson, 1976, p.67) to report to police. Thus, the lack of psychological distress following victimization should be considered in research examining crime reporting behavior.

Finally, it is important to acknowledge that participation in the criminal justice system (i.e. reporting the crime to police) may not always be helpful to the crime victim. Indeed, it is therefore relevant to explore the “retraumatization” (Orth & Maercker, 2004, p. 213) hypothesis as mentioned in prior literature. Though much literature suggests that participation in the criminal justice system may lead to greater distress for victims of violent crime (particularly sexual assault) (Bohmer & Blumberg, 1975; Campbell, 2008; Campbell, et al., 1999; Madigan & Gamble, 1991), recent examinations have failed to find support for this hypothesis (Frazier & Haney, 1996; Orth & Maercker, 2004). However, these recent examinations (see above for a review) are limited through their sampling methods, as they only include those already involved with the criminal justice system or with victim advocacy groups. This study aims to further this literature by gathering information from victims of sexual assault to determine post crime adjustment differences between those involved in the criminal justice system, and those who were not involved.

### **Summary and Study Objectives**

As discussed, over 200,000 sexual assaults, rapes, and attempted rapes occur each year in the United States (USDOJ, 2006<sub>A</sub>; 2006<sub>B</sub>; 2008). These crimes may cause a variety of detrimental impacts in social (APA, 2000), occupational (APA, 2000; Taylor et al., 2006), and psychological (APA, 2000; Bollinger et al., 2000; Brown et al., 2001; Norris & Kaniasty, 1994) realms. Survivors of sexual assault who develop PTSD as a result of their victimization are more likely to experience difficulties functioning in a variety of settings including educational, social, and occupational environments (APA, 2000). They may further sustain financial burdens as a result if they are forced to pay for related medical or mental health services or if they are forced to take a leave of absence

from work (APA, 2000; Taylor et al., 2006), and their quality of life may decline (Seedat et al., 2006).

Beyond the costs to the individual victims, society bears a substantial burden for the cost of crime as well. Society is forced to provide funding for law enforcement agencies and the justice system, replacement of victim losses, and crime-prevention agencies, and sustains losses related to other costs including opportunity costs and methods of private deterrence. In all, the costs of crime to the larger society are estimated to exceed one trillion dollars annually (Anderson, 1999). The estimated annual cost of anxiety disorders such as PTSD, including medical and opportunity costs, is over 40 billion dollars (Greenberg et al. 1999). However, compensation programs which would provide financial support for medical and mental health services for crime victims most often require a crime report to be filed within a limited period of time (NACVCB, 2009), thus placing limitations on the resources available to attenuate the impacts of victimization.

Much research has been conducted on why individuals report or do not report their victimizations to police. Criminological literature has uncovered numerous factors which influence these decisions (Anderson, 1999; Baumer, 2002; Goudriaan, Wittebrood, & Nieubeerta, 2006; Miller, 2008; Pino & Meier, 1999; Wiley, 2001), though research examining cognitive and affective elements involved in crime reporting is still limited. The “cost-benefit analysis” (Gottfredson & Gottfredson, 1988, p. 25) of crime reporting suggests that survivors of crime generally weigh the costs and benefits of reporting a crime to police, and choose their actions rationally after being victimized. Those factors involved in these decisions may include (1) viewing the crime as a private matter, (2) desire for protection, (3) viewing the crime as trivial or not important to police, (4) simply viewing the event as a crime and desiring punishment for the offender, (5) having

sustained injuries related to the assault, or (6) the relationship of the victim to the perpetrator (Bachman, 1998; Felson et al., 2002; USDOJ, 2006<sub>A</sub>; 2006<sub>B</sub>; 2008).

Despite the support found for the aforementioned model of crime reporting, existing literature has focused little attention on psychological influences in crime reporting behavior. Specifically, for victims of sexual assault or other trauma who develop post-traumatic stress symptoms following victimization, they may suffer from significant symptoms of avoidance as they attempt to regulate the negative emotions surrounding the event (Gross & Thompson, 2007). As they avoid thoughts, feelings, people, and conversations which remind them of the crime, they may additionally avoid speaking with law enforcement authorities about the victimization due to symptoms of their disorder. Yet despite the notion that the lack of reporting may be due to symptoms of a mental health condition, those who do not report their crime to police within a short time frame (in most states) will likely be unable to receive compensation for incurred medical or mental health services (NACVCB, 2009). Beyond the symptoms of PTSD which may develop following victimization, trauma survivors often suffer from symptoms of depression as well (APA, 2000). The symptoms of depression may also interfere with reporting behavior in a variety of ways.

At issue is whether it is in the best interest of society to deny CVC benefits to victims of crime who do not report their crime to police, when the lack of report may be partially due to symptoms of post-event distress for which they may require professional assistance. Indeed, if programs such as CVC do not provide support for services to victims of crime, these individuals may continue to suffer from various difficulties (detailed above), and our society may continue to absorb the costs of these conditions. Further, although it is not the focus of this paper, it is additionally noted that the

requirement for victims to notify police of a crime in order to receive CVC benefits may be undesirable simply because of the level of dissatisfaction with the traditional criminal justice system. As outlined above, a number of studies comparing “restorative justice” (Sherman & Strang, 2007, p. 8) models to the traditional criminal justice system have shown greater victim satisfaction with “restorative justice” (Sherman & Strang, 2007, p. 8). Thus, the benefits to reporting a crime to police may be perceived as lower simply due to the criminal justice methods utilized in the United States.

Some authors argue that participation in the criminal justice system results in a “retraumatization” (Orth & Maercker, 2004, p. 213) effect, or an exacerbation of victim stress (Bohmer & Blumberg, 1975; Campbell, 2008; Campbell, et al., 1999; Madigan & Gamble, 1991). Though multiple studies have suggested that participation in the criminal justice process may not result in this phenomenon (Frazier & Haney, 1996; Orth & Maercker, 2004), more research is needed to determine the differences in levels of psychological distress for those who were involved with legal authorities and those who were not.

Additionally, though much research has been conducted to investigate the factors which relate to crime reporting behavior, many of these examinations are limited. Several studies have utilized data from the NCVS, which, designed as a system for tracking characteristics of crime, victims, and offenders, is limited as to the research questions it is able to address. Research has been conducted outside the realm of the NCVS in order to address additional questions and hypotheses, but has failed to provide substantial information on the effects of mental health problems on crime reporting behavior. As these problems may relate directly to how decisions to report victimization are made, there is a clear need for research in this area to be aimed at psychological

topics typically not addressed in the field of criminology. In particular, attention should be paid to psychological factors in victims who may develop symptoms of posttraumatic stress or other difficulties as a result of a crime. Studies investigating these conditions and how they relate to other correlates of crime reporting behavior would provide valuable information to assist in the conceptualization of how decisions to report or not report a crime are made.

The present study proposes to examine psychological correlates of sexual assault, and how they may impact the decision to notify police. Specifically, this study aims to gather information from victims of sexual assault about initial post-crime reactions, including post-traumatic stress symptomology, depressive/anxious symptomology, and post-traumatic cognitions, and how they are involved in whether crimes are reported to police. Further, current ratings of these constructs will be obtained in an effort to explore links between participation in the criminal justice system process and heightened distress at a later time, as would be posited by the “retraumatization” (Orth & Maercker, 2004, p. 213) hypothesis.

### **Hypotheses**

1. It is hypothesized that the factors of (1) viewing the crime as a private matter, (2) desire for protection, (3) viewing of the crime as trivial or not important to police, (4) viewing the event as a crime, (5) having sustained injuries, and (6) the relationship to the offender will all contribute to whether or not a crime was reported to police. Specifically, those participants who were not injured, were assaulted by a person known to them, viewed the event as less of a crime, perceived the event as trivial or not important to police, had less desire for protection, and viewed the crime as a private matter will be less likely to have reported the crime to police. It is further



- hypothesized that the addition of psychological variables will significantly increase the ability of the model to predict whether crimes were or were not reported to police. Specifically, it is hypothesized that greater levels of (1) initial posttraumatic symptom severity, (2) initial depressive symptom severity, (3) initial post-crime negative cognitions about the self, and (4) initial post-crime negative cognitions about the world will be related to a lower rate of police notification.
2. An exploratory analysis will be conducted to determine the factors which contribute to current levels of posttraumatic symptom severity. The “retraumatization” (Orth & Maercker, 2004, p. 213) hypothesis would suggest that participation in the legal process would lead to greater distress. This hypothesis is intended to explore the factors which may contribute to post-crime posttraumatic symptom severity, including participation in the legal system. The model will include the variables of (1) initial post-crime posttraumatic symptom severity, (2) current depressive symptom severity, (3) current negative cognitions about the self, (4) current negative cognitions about the world, (5) perceptions of the criminal justice system, (6) whether injuries were sustained during the assault (dichotomous), (7) crime reporting status (dichotomous), and the (8) crime, (9) trivial, (10) protection, and (11) privacy factors included in the Reasons for Calling the Police questionnaire. It is hypothesized that, contrary to the “retraumatization” (Orth & Maercker, 2004, p. 213) hypothesis, time since the event and post-event PTSD symptomatology will account for more variance in current posttraumatic symptom severity than police notification status. It is additionally hypothesized that greater levels of current depressive symptom severity, greater levels of current negative cognitions about the self, greater levels of negative cognitions about the world, a more critical perception of the criminal justice system,

and having sustained additional physical injuries at the time of the assault will predict higher levels of current posttraumatic stress more reliably than whether or not the individual reported the event to police. Further exploratory analyses will be conducted in order to determine if participation in various stages of case processing are related to greater levels of posttraumatic stress symptomatology.

## **Methods**

### **Participants**

Participants included 1098 individuals who responded to online advertisements requesting their participation in an online research study about “unwanted and forced sexual experiences,” reactions to these experiences, and impressions of the criminal justice system. A portion of the participants also included undergraduate psychology students enrolled at a large Midwestern university. All data were collected between June of 2010 and April of 2011 with survey tools provided through [surveymonkey.com](http://surveymonkey.com) (see Appendix A for advertisement information). Of the 1098 participants who met the eligibility criteria of (1) being age 18 or older, (2) having had an unwanted or forced sexual experience (since age 14), (3) not having completed the survey previously, and (4) provision of informed consent, 218 were eliminated from analysis due to the length of time since they were assaulted (15 years or greater). Additionally, as several control questions were included in the survey to ensure accuracy in participant responses, the data of four participants were excluded for failure to answer three of the four control questions correctly. One control question was removed from consideration due to an unusually large amount (28.5 percent) of incorrect responses (see explanation below). Finally, the data of 42 respondents who indicated that they were younger than 14 at the time of the unwanted sexual experience were excluded from analyses.

The remaining data (n=834) were obtained from a predominantly female sample (n=668; 80.1 percent), though a substantial number of males also participated (n=166; 19.9 percent). Approximately nine percent of participants (n=76) were university students who accessed the survey website through a psychology department web portal. The remainder of the participants accessed the survey via various website postings including craigslist.com (36.9 percent; n=308), backpage.com (44.6 percent; n=372), and others (9.4 percent; n=78). Participants characterized their communities as primarily urban (n=726; 87.1 percent), with a lower number of individuals from more rural areas (n=101; 12.1 percent). In all, 43 states (including the District of Columbia) were represented. Sixty-three percent of the participants were White (n=526), while 17 percent identified as African-American (n=142). Hispanic and Latino participants comprised close to nine percent of the sample (n=72). Approximately seven percent identified themselves as Asian (n=59), and about four percent were characterized as “other” (n=34), a group which included Native Americans, Pacific Islanders, and Multi-racial individuals. Participant ages ranged from 18 to 72, with a mean age of 28.3 years (SD=9.57). On average, the age at which individuals had the unwanted and forced sexual experience was 23.8 years (SD=9.59), though data indicated a wide age range (from 14 through 67). The amount of time between when individuals had the unwanted and forced sexual experience and when they participated in the survey ranged from an estimated three days to 14.89 years, with a mean time since assault of 4.41 years (SD=3.96).

Data collected from undergraduate psychology students were compared to those collected from other online sources (i.e. community sample). No differences were found with regard to racial group,  $\chi^2(4) = 4.41, p = .353$ , household income,  $\chi^2(7) = 4.31, p = .743$ , time since the event,  $t(820) = -.907, p = .365$ , or crime-reporting status,  $\chi^2(1) =$

2.69,  $p = .101$ , and the student sample did not provide enough variability in marital status for adequate comparison. The student sample differed from the community sample on education level, as the majority of the students were high school or college graduates, and none endorsed having only elementary or partial high school training,  $\chi^2(6) = 16.30$ ,  $p = .012$ . Employment status differences also emerged,  $\chi^2(2) = 17.067$ ,  $p < .001$ , most likely due to the large proportion of unemployed (30.3 percent) and part-time employed (51.3 percent) students. Further, student mean current age was about three years less than those in the community sample,  $t(832) = 2.627$ ,  $p = .009$ , and their mean reported age at the time of the unwanted sexual experience was approximately 3.6 years less,  $t(820) = 3.143$ ,  $p = .002$ . Given that one group was comprised of college students, it is unsurprising that they tended to endorse particular education levels and employment statuses, and fell at a younger mean age than the community sample. It is unclear why the college student participants may have encountered unwanted sexual experiences at a younger age, however this may be due to the fact that the survey instructed participants to consider the most recent event if more than one had occurred, and the students were younger than the community sample. In the case of both the current age ( $d=.182$ ) and the age at the time of the event ( $d=.219$ ), effect sizes of group membership (i.e. college student vs. community sample) were small.

Data were also inspected for differences between male and female participants. There were significant differences between males and females on racial group,  $\chi^2(4) = 14.683$ ,  $p = .005$ , as the group of males included a significantly greater number of people of Asian descent. Differences in educational level were also discovered,  $\chi^2(6) = 29.56$ ,  $p < .001$ , as more males endorsed graduate school education and fewer endorsed partial college training. Males and females differed on employment status,  $\chi^2(2) = 35.686$ ,  $p$

< .001, with more males endorsing full time employment, and fewer males describing their occupational status as part time employed. Further gender comparisons revealed differences in marital status,  $\chi^2(5) = 17.148, p = .004$ , with a significantly greater number of males describing themselves as married. Additionally, males were, on average, about 3.5 years older than female participants at the time of the survey,  $t(832) = -5.550, p < .001 (d=.385)$ , about 3.7 years older at the time of the unwanted or forced sexual experience,  $t(820) = -4.491, p < .001 (d=.314)$ , and had experienced the event longer ago  $t(820) = -2.045, p = .041 (d=.143)$ , with an average of 4.98 years since the event for men (1820 days) and 4.28 years for females (1561 days). No gender differences were found with regard to household income level,  $\chi^2(7) = 10.788, p = .148$ , or crime reporting status,  $\chi^2(1) = 1.864, p = .172$ . Due to differences between groups, primary analyses were conducted separately and as a group (detailed below).

### Measures

The following measures were included in the survey for all participants to complete. Due to attrition throughout the course of participation, some individuals did not complete all measures.

**Demographic questionnaire.** The demographic questionnaire included questions about age, ethnicity, educational level, employment status and occupation, income level, and when the most recent assault occurred. A greater number of respondents ended their participation in the later portions of the survey, possibly due to the length of time required to complete it.

**Life Events Checklist (LEC).** The LEC is a brief 17-item self-report measure designed to assess for the presence of traumatic experiences in respondents' lives. The measure gathers information regarding 16 different types of traumatic experiences known

to result in psychological distress and potentially PTSD. Participants are able to indicate whether the event happened to them, if they witnessed it, if they heard about it happening to someone close to them, if they are unsure if the item applies to them, and if the event does not apply to them. The measure has been illustrated to have adequate convergent validity with other measures which assess levels of exposure to trauma (Gray, Litz, Hsu, & Lombardo, 2004).

**Traumatic Events Questionnaire (TEQ)** (Vrana & Lauterbach, 1994). The TEQ is an 11 item self-report measure designed to assess for the presence of traumatic experiences. Items include questions regarding whether someone has been the victim of an accident, natural disaster, violent crime (general), child abuse, sexual assault, domestic violence, and other categories. Participants respond by endorsing whether an event happened to them, how many times they experienced this event, the severity of the event and their emotional reaction, and general details of the trauma (from a brief list of choices). The measure is currently without reliability data, though validity data suggest that the measure is an appropriate measure of traumatic events, as those endorsing events on the scale were found to obtain significantly greater ratings on scales of depression, anxiety, and PTSD symptomology than those who did not endorse traumatic experiences (Vrana & Lauterbach, 1994). Only two questions regarding sexual assault and rape were administered in order to limit participant burden.

**PTSD Checklist (PCL)** (Weathers, Litz, Herman, Huska, & Keane, 1993 as cited in Antony, Orsillo, & Roemer, 2001). The PCL is a 17-item self-report measure which assesses symptoms of Posttraumatic Stress Disorder (PTSD). Participants respond by indicating how much each symptom has bothered them in a given time frame. Possible ratings range from 1 (not at all) to 5 (extremely). Examinations of the PCL have yielded

internal consistency ratings between .94 and .97 for various populations (including sexual assault) and test-retest reliability of .96 in veterans. Versions of the PCL have been shown to be highly correlated with other measures of PTSD with correlations between .77 and .93, and have demonstrated the ability to diagnose PTSD with sensitivity and specificity ratings above .80 (Weathers, et al., 1993; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). The measure was administered twice. Participants were first asked to rate items based upon how they felt in the 48 hours after the unwanted or forced sexual experience, and were subsequently asked to complete the measure based upon how they felt currently (in the week prior to their participation).

**Depression Anxiety Stress Scales-21 (DASS-21)** (Henry & Crawford, 2005; Lovibond & Lovibond, 1995). The DASS is a 21-item self-report measure. Items are divided into three scales, including Depression (D), Anxiety (A), and Stress (S), with 7 items on each scale. Participants rate each item on a four-point Likert scale. Test-retest data of the DASS on clinical samples places reliability between .71 and .81 over a two-week time frame. Internal consistencies are also high (DASS-D: .91; DASS-A: .84; DASS-S: .90). The original DASS has been validated with respect to each of its factors. The DASS-D scale was correlated .74 with the BDI, and .54 with the BAI. The DASS-A scale was correlated .58 with both the BDI and BAI (Beck & Steer, 1990 as cited in Nezu, Ronan, Meadows, & McClure, 2000). The DASS-21 has been found to result in scores similar to the full version, and has adequate reliability (Henry & Crawford, 2005). The measure was administered twice. Participants were first asked to rate items based upon how they felt in the 48 hours after the unwanted or forced sexual experience, and were subsequently asked to complete the measure based upon how they felt currently (in the week prior to participation).

**Posttraumatic Cognitions Inventory (PTCI)** (Foa et al., 1999). The PTCI is a 36-item self-report measure which gathers information about three trauma-related cognitive constructs. These include (1) negative cognitions about the self, (2) negative cognitions about the world, and (3) self-blame. Participants rate each item on a Likert scale from 1 (totally disagree) to 7 (totally agree). Data reveal good reliability coefficients for each of the scales, ranging from .86 to .88. Test-retest reliability data also yield good results, with correlations above .80 for all scales after three weeks. Scores on this measure have been shown to be correlated with PTSD severity, depression, and anxiety, with all coefficients at or above .75. Further, although it is not intended as a diagnostic tool, the PTCI has shown the ability to categorize participants into groups with or without PTSD with good specificity (.93) and sensitivity (.78) ratings. The measure was administered twice. Participants were first be asked to rate items based upon how they felt in the 48 hours after the sexual assault, and were subsequently asked to complete the measure based upon how they felt currently (in the week prior to participation).

**Information Sheet.** The Information Sheet is a 22-item self-report measure designed to gather information about (1) characteristics of the unwanted sexual experience, (2) information about the perpetrator, (3) date of occurrence, (4) whether or not it was reported to police, (5) if the respondent was injured or sought medical care after the event, (6) how long they waited before reporting the event (if applicable), and (7) the stages of the legal process which were completed and which they participated in (if applicable). This is a locally constructed measure currently without reliability or validity data.

**Additional Information Sheet.** The Additional Information Sheet is a 13 item self-report measure designed to gather information about individuals' knowledge of Crime Victim Compensation and (if applicable) their experience with this program. Items also



addressed respondents' experience with (or desire for) psychological counseling following this experience. This is a locally constructed measure currently without reliability or validity data, however the measure has good face validity.

**Reasons for Calling the Police Questionnaire (RCP-A and RCP-B).** (See Tables 1 and 2 for item content) The RCP measure is a 20-item self-report measure designed to gather information as to why individuals did or did not report the unwanted or forced sexual experience to police. Items assessing why individuals did or did not call police were constructed based on preexisting literature regarding commonly cited reasons for crime reporting decisions (Bachman, 1998; Felson et al., 2002). The hypothesized four factor structure was confirmed with factor analysis (see results section), resulting in a four-factor structure of (1) Seriousness (how serious the respondent perceived the event to be/whether they perceived it to be a crime), (2) Privacy (their desire for privacy following the event), (3) Triviality (their perception of the triviality of the assault and whether police would take it seriously), and (4) Safety (their desire for protection/safety following the event). Those who reported the event to police were administered Form B of the measure, and those who did not report were administered Form A. The differences in question wording were minimal, and were included in order to account for participant reporting decisions. Full results of the factor analysis are reported in the following section. These results along with full item content can be viewed in Tables one and two.

**Perceptions of the Criminal Justice System.** The Perceptions of Criminal Justice Response questionnaire is a modified version of scale by Frazier and Haney (1996), which has been used in prior research (Walsh & Bruce, 2011). This measures victim attitudes about police detectives, about the prosecuting attorney, and about the legal system in a general context. Internal consistency and reliability on the original version

falls above .83. The current version is a locally constructed, new questionnaire currently without reliability and validity data, though it has good face validity. Questionnaire items ask respondents to indicate their impressions of the criminal justice system regardless of prior contact. Questions regarding whether participants had other contact with the criminal justice system (aside from the reporting status in question) were not asked during this study.

**Control questions.** Five additional questionnaire items were added to the administration at various points to provide a means of detecting random responding. These questions included items (1) Please click #4, (2) Please click response #2, (3) What color is the survey webpage, (4) Please click response #1, and (5) Are you filling out a survey. As noted above, the item regarding the color of the survey webpage was excluded from consideration, as nearly 30 percent of respondents provided an unexpected response to this question. As computer monitors may vary in their color presentation, and individuals may differ with regard to their ability to observe and distinguish colors, exclusion of this item was deemed appropriate. Those participants who failed to answer at least three of remaining four items correctly (n=4) were excluded from analysis.

### **Procedure**

Upon verifying that they were over the age of 18, that they had an unwanted or forced sexual experience since the age of 14, and that they had not previously completed the questionnaire, participants were provided with the informed consent document which included contact information for psychological services, crisis hotlines, and the principal investigator. Those who provided informed consent to participate then began the survey. Participants completed the demographic questionnaire, and the Information Sheet. Those who had experienced more than one unwanted or forced sexual event were asked to

answer all questions with regard to the most recent event. If a participant indicated that they had reported the event to police or that they had asked someone else to do so, they were asked to answer questions relating to how long they waited before reporting, if the case was ongoing, the stages of the case which were completed, the result of the legal case, and what aspects of the legal process they participated in. All participants then completed the Reasons for Calling Police Questionnaire. Those who reported the event to police completed Form B (Table 2) and those who did not report the event completed Form A (Table 1). Following completion of this measure, all participants were asked to complete the PCL, DASS-21, and PTCI with regard to how they felt in the two days after the unwanted or forced sexual experience. Participants were then asked to complete the Additional Information Sheet. Upon completion of this measure, participants again completed the PCL, DASS-21, and PTCI, responding as to how they had felt during the week prior to their participation. Following completion of these measures, participants completed the Perceptions of the Criminal Justice System measure with regard to how they currently felt. Lastly, respondents completed the Life Events Checklist as to whether a series of potentially traumatic events (1) had happened to them, (2) were witnessed by them, (3) were learned about by them, or if they (4) were not sure or (5) the item did not apply.

At the conclusion of these measures, participants were again provided with contact information for the principal investigator, for a national crisis hotline, and were provided links to internet directories for psychological services. Participants who responded to the survey through the psychology subject pool at the University of Missouri – St. Louis were offered the opportunity to provide their email address in order to receive psychology course extra credit for their participation. Those who entered the survey

through other advertisements or internet postings were provided the chance to enter their email address for participation in a raffle for a \$100 gift card. Those interested in being entered in a drawing or in receiving extra credit clicked on an internet link which directed them to a separate survey where they entered the necessary information. The use of a separate survey was utilized to prevent the linking of participant answers with participant names or email addresses. Upon the completion of data collection, the raffle drawing was held and the gift card provided to the selected participant.

## **Results**

### **Sample Characteristics**

Of the 834 participants included in data analyses, 40 percent (n=337) reported one unwanted or forced sexual experience. Approximately 21 percent (n=175) had two of these experiences, and 34 percent (n=284) reported three or more unwanted sexual experiences (approximately 5 percent of respondents did not answer this question). Over 65 percent (n=545) of the events included sexual penetration of the respondent's mouth, anus, or vagina, with an additional 13 percent reporting attempted but unsuccessful penetration (n=107). Further, 37 percent (n = 311) reported experiencing another form of sexual contact, with 11 percent (n=93) endorsing attempted (i.e. non-penetration) sexual contact. Approximately 12 percent (n=105) recalled the perpetrator as being female, but the large majority of respondents reported being assaulted by a male perpetrator (n=726; 87.1 %). Most participants were not injured as a result of the event, though about 21 percent (n=179) reportedly experienced injuries more serious than bruising (e.g. cuts/scratches, burns, broken/dislocated bones, damaged teeth, or gunshot/stab wounds). A smaller percentage (n=129; 15.5 %) reported receiving medical care after the event. Of the 834 respondents, just 14 percent (n=118) reported the event to police.

Of those who reported the event to police ( $n=115$ ; 13.84 percent; three did not provide reporting time frame data), 77.1 percent did so within the 72 hour window required by many state Crime Victim Compensation (CVC) programs. The majority reported the event within the first week (83.8 percent), and over 91 percent made a report within the first month afterward. Approximately eight percent waited longer than a month to file a report, with all remaining respondents reporting the event within eight months, with the exception of one participant who waited four years to file the report. Approximately 80 percent of reporters indicated that they felt the need for therapy or counseling after the event, and about 69 percent actually attended therapy. Despite having reported the event to police, just 49 percent of those who reported the event expressed that they had been told about CVC. Overall, 51 percent were not told about CVC benefits, 37 percent were informed by police, a victim advocate, or a prosecutor, two percent were told by a friend or family, and about seven percent found out about it through other ways. Two-tailed independent samples  $t$ -tests failed to find any relationship between how long ago the event happened (maximum = 15 years) and whether it was reported to police,  $t(820) = -.674, p = .500$ , or whether the survivor was told about CVC benefits,  $t(91) = 1.479, p = .143$ .

Although 49 percent of reporters were told about CVC, just 40 percent were aware that the program provides benefits for medical and mental health bills for those with approved applications, and just 16 percent filed a CVC application. Of those who applied, 77 percent reported that their application was approved, and 54 percent recalled receiving benefits to cover the cost of medical or mental health care.

Of those who did not report the event to police ( $n=556$ ), approximately 45 percent recalled feeling the need for counseling after the event, but just 26 percent of non-

reporters actually attended counseling. Further, just 15 percent of non-reporters had heard of CVC, but 33.6 percent indicated that they would have been more likely to notify police following the event had they been aware of the benefits available through the CVC program.

### **Data Analysis Strategy**

All statistical analyses were conducted using SPSS 19.0. As the Reasons for Calling the Police questionnaire is a measure constructed locally and for use in this particular study, principle components analysis was used to verify the hypothesized contributions of questionnaire items and factor structure. Following verification of the factor structure of this measure, hypothesis one was tested using a series of logistic regression analyses. As some variables included in the logistic regression model were found to be insignificant contributors to the model, included predictors were removed until a final model with significant predictors was obtained. Preliminary and final analyses are divided into subsections below. Hypothesis two was tested using a series of multiple regression analyses. Control variables were added to the model first, and the reporting status of the event was added on step two, separate from other variables in order to allow for inspection of the unique influence of reporting status on the model. Steps three and four of the model included legal system variables and mental health variables. Additional data provided the opportunity for analysis of other legal system variables and their influence upon current levels of posttraumatic stress symptomatology.

### **Analysis of the Reasons for Calling the Police questionnaire**

The Reasons for Calling the Police Questionnaire (RCP-A and RCP-B) was analyzed using principal components analysis in order to determine if the hypothesized factors of (1) seriousness, (2) safety, (3) desire for privacy, and (4) triviality emerged from the data.

As questionnaire items differed slightly between RCP-A and RCP-B, data from those who reported the event (RCP-B) were analyzed separately from those who did not report the event (RCP-A).

Three items from the measure were excluded from the final factor analysis due to (1) similarly sized correlations across multiple factors (item #2), or failure of the item to load on the same factor across the two companion instruments (items #6 and #11). Principle Components Analysis (Promax rotation) was first conducted using the group of non-reporters (RCP-A), which comprised the majority of data ( $n = 556$ ). Results of a Kaiser-Meyer-Olkin measure of sampling adequacy indicated appropriate sample size for factor analysis ( $KMO = .821$ ). All KMO correlations were greater than .656, above the minimum accepted value (Field, 2009). Bartlett's test of sphericity was significant,  $\chi^2(136) = 3940.54, p < .001$ , indicating that variables were related as anticipated. Kaiser's (1960, as cited in Field, 2009) criterion (i.e. eigenvalues  $> 1.0$ ) was utilized in retaining factors in the model. The analysis resulted in a four factor solution (see Table 1 for rotated factor loadings), which together accounted for approximately 64 percent of the variance. The extracted components appeared to represent the themes of (1) seriousness/whether event was a crime (Chronbach's  $\alpha = .86$ ), (2) beliefs about personal safety and whether police could protect them (Chronbach's  $\alpha = .77$ ), (3) their desire for privacy/concern that others would find out about the event (Chronbach's  $\alpha = .69$ ), and (4) the triviality of the event/whether the police would take it seriously (Chronbach's  $\alpha = .77$ ).

An additional series of analyses was conducted to verify that the same factor structure emerged for those who reported the event to police (i.e. completed RCP-B). Once again, results of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested a sample size appropriate for factor analysis ( $KMO = .771$ ). Additionally, all KMO correlations ( $< .621$ )

were again over the minimum accepted value (Field, 2009). Bartlett's test of sphericity was also significant,  $\chi^2(136) = 1065.11, p < .001$ , showing that variables included in the model were significantly related. As with form RCP-A, factors were identified utilizing Kaiser's (1960, as cited in Field, 2009) criterion (i.e. eigenvalues greater than 1.0), which resulted in four extracted factors which cumulatively accounted for approximately 71 percent of the variance in the model. The extracted components included themes of (1) seriousness/whether event was a crime (Chronbach's  $\alpha = .85$ ), (2) beliefs about personal safety and whether police could protect them (Chronbach's  $\alpha = .84$ ), (3) their desire for privacy/concern that others would find out about the event (Chronbach's  $\alpha = .83$ ), and (4) the triviality of the event/whether the police would take it seriously (Chronbach's  $\alpha = .87$ ). Those components which were extracted with RCP-B included the same contributing variables as with RCP-A, and thus represent the same themes (see Table 2).

Following the principle components analysis, each factor was scored by calculating the average of the item values within each factor. As items included in measure RCP-B were inverse versions of the items in RCP-A, questions in RCP-B were reverse scored. The mean scores derived from this procedure were used in relevant analyses.

**Factor influences.** Further analysis using two-tailed between subjects t-tests were conducted in order to reveal situational characteristics which contributed to participant ratings on the factor scales. Participants assaulted by someone known to them were more likely to view the event as trivial or unimportant to police,  $t(720) = 3.125, p = .002$  ( $d=.34$ ), and to desire privacy,  $t(722) = 3.169, p = .002$  ( $d=.35$ ). They also viewed the event as less serious,  $t(716) = 5.449, p < .001$  ( $d=.60$ ). No differences emerged with regard to the participants' relationship to the perpetrator and beliefs about whether police could keep them safe,  $t(719) = 1.420, p = .156$  ( $d=.16$ ). Those events which involved



penetration by the perpetrator were viewed as more serious,  $t(714) = 3.553, p < .001$  ( $d=.28$ ), and victims held a greater desire for privacy,  $t(720) = -2.389, p = .017$  ( $d=.19$ ). Further, victims felt less confidence that the police could keep them safe,  $t(717) = -2.204, p = .028$  ( $d=.17$ ), but felt that police would have taken the event seriously,  $t(718) = 3.479, p = .001$  ( $d=.27$ ). Participants who sustained physical injuries (more significant than bruising) viewed the event as more serious,  $t(696) = 6.354, p < .001$  ( $d=.57$ ), and felt that the police were less capable of keeping them safe,  $t(699) = -3.916, p < .001$  ( $d=.35$ ). Having sustained injuries was not related to participants' desire for privacy,  $t(702) = 1.151, p = .250$  ( $d=.10$ ), or whether they believed the police would view the event as trivial,  $t(700) = 1.350, p = .178$  ( $d=.12$ ). Finally, those who obtained medical care following the event rated it as being more serious,  $t(710) = 9.441, p < .001$  ( $d=.96$ ), less trivial to police,  $t(714) = 8.214, p < .001$  ( $d=.83$ ), and were less concerned about keeping the event private,  $t(716) = 4.007, p < .001$  ( $d=.41$ ). Yet, whether they sought medical care was not related to participants' beliefs about the ability of the police to keep them safe,  $t(713) = 1.842, p = .066$  ( $d=.19$ ).

### **Hypothesis 1**

Prior to analysis, data assumptions were explored. Multicollinearity diagnostics for variables used in hypothesis one verified the absence of multicollinearity. For the female only sample, non-student only sample, and the full sample, Variance Inflation Factors all fell below maximum recommended levels of 10 (Myers, 1990, as cited in Field, 2009), and tolerance statistics were above minimum values. Following the final logistic regression analysis, continuous variables were examined to verify the assumption of linearity of the logit, which was confirmed. On the variable measuring the perceived seriousness of the event, one participant achieved a score three standard deviations above

the mean, and was excluded as a statistical outlier. In spite of this, analyses with and without this outlier achieved nearly identical results.

**Preliminary analyses.** A series of binary logistic regression analyses were performed in order to determine if included variables could correctly classify individuals by whether or not they reported the unwanted sexual experience to police. Prior to obtaining the final results, a number of preliminary analyses were run. A total of 669 participants were included in the analysis, with 165 cases excluded due to missing data. Data were missing completely at random as shown by Little's (1988) MCAR test,  $\chi^2(171) = 182.36, p = .262$ . The sample was primarily comprised of data from participants who did not report the event to police ( $n = 573$ ), though the size of the group of reporters ( $n = 96$ ) provided adequate statistical power for the proposed analyses. The initial analysis included all hypothesized variables in the regression analysis (i.e. [1] private matter score, [2] desire for protection score, [3] triviality score, [4] seriousness/crime score, [5] injury sustained or not, and [6] relationship to offender). The analysis of the initial model compared against a constant only model was statistically significant,  $\chi^2(9) = 206.18, p < .001$ , however actual predicted classification was not highly accurate for the group of event reporters (96 percent of non-reporters and 41 percent of reporters correctly classified). The analysis was conducted again using the dichotomous variable of whether an individual received medical care in replacement of the variable indicating whether an injury occurred. This model resulted in better predictability,  $\chi^2(9) = 295.22, p < .001$ , with 97 percent and 63 percent of non-reporters and reporters being categorized correctly. All variables included in the regression analysis contributed significantly to the model with the exception of respondents' level of concern over the ability of the police to protect them ("Safety"). This variable was removed from subsequent analysis.

The remaining variables of (1) whether medical care was obtained, (2) the victim-offender relationship (reference group: 'Acquaintance'), (3) the perceived level of seriousness/viewing the event as a crime, (4) the level of desire for privacy, and (5) their perception of the event as trivial/whether police would take the event seriously, were all significant contributors to the model,  $\chi^2(8) = 295.82, p < .001$ , and were retained in subsequent analyses. Inclusion of additional predictors including (1) gender, (2) ethnic group, and (3) the type of event (e.g. penetration vs. no penetration, contact vs. no contact) did not contribute to the outcome of the model and were not included in further analyses.

**Final analyses.** To further test hypothesis one, the binary logistic regression analysis was conducted again, with the inclusion of all hypothesized mental health variables on step two of the model. Assault characteristic and legal system variables included on step one again produced a significant difference from the constant-only model,  $\chi^2(8) = 253.46, p < .001$ , with 63 percent and 97 percent of reporters and non-reporters correctly classified. The addition of all mental health variables together on step two, however, did not improve the predictability of the model,  $\chi^2(4) = 7.71, p = .103$ . The most insignificant contributor was eliminated from each subsequent model. Exclusion of the PTCI subscale regarding thoughts about the world improved the results of the model, however the change in the model was still not significant,  $\chi^2(3) = 7.76, p = .051$ , and, with the exception of PCL scores, other mental health variables still did not contribute to the model. The PTCI scale regarding thoughts about the self, and the measure of depression (DASS-21 D-Scale) were removed on the following steps of analysis. Upon removal of these variables from the model, results revealed that symptoms of posttraumatic stress (i.e. PCL scores) significantly improved the predictability of the model. Legal system and event characteristic variables alone were significantly related to

outcome when compared to the constant only model,  $\chi^2(8) = 276.14, p < .001$ , with correct classification of 63.5 percent of those who reported to police, and 97.6 percent correct classification of those who did not report the event to police. The inclusion of PTSD symptom scores improved the model significantly,  $\chi^2(1) = 7.08, p = .008$ , and the model was able to correctly classify 97.0 percent of non-reporters and 65.6 percent of those who reported the event to police (see Table 3).

The model was run once more with the PCL cluster scores. Specifically, as the PCL is designed to measure levels of PTSD symptomology from the three separate symptom clusters of the disorder (i.e. re-experiencing, avoidance, and hyperarousal), these scores were included in the model separately and the total PCL score was removed from step two. The results of this analysis provided a stronger model than the model including PCL total score. Again the legal system and event characteristic considerations were significantly related to the outcome variable when compared to the constant only model,  $\chi^2(8) = 278.53, p < .001$ . The model correctly predicted the status of 97.6 percent of non-reporters, and 63.9 percent of reporters. Addition of the (1) re-experiencing, (2) avoidance, and (3) hyperarousal symptom scores on step two significantly improved the ability of the model to predict the outcome,  $\chi^2(3) = 17.17, p = .001$ , correctly classifying 97.2 percent of non-reporters and 68 percent of reporters (see Table 4).

Odds ratios were utilized as effect sizes for the model. Review of the odds ratios for the model including total PCL score revealed that for each point increase, participants were 1.03 times as likely to report the event to police. Though a small change in odds, the range in values on the scale (17 to 85) would provide for meaningful differences in reporting status as scores increased or decreased. Despite these significant results, the separation of the three PTSD symptom clusters provided more detailed information about

the relationship between symptoms and reporting status. Specifically, results indicated that for each point increase in scores on the re-experiencing and hyperarousal symptom scales, the odds of a police report were 1.12 and 1.11 times as likely respectively. Avoidance symptoms had a differing effect, as for each point increase in these symptoms, the odds of a report fell to 0.92 times as likely, thus actually decreasing the odds of the police being notified. Again, although these three symptom cluster scores appear to produce a small change in odds, the range of the scales (Re-experiencing and Hyperarousal range: 5 to 25; Avoidance range: 7 to 35) provides for the possibility of a larger influence on the outcome. Whether individuals received medical care or not resulted in the greatest change in odds, as those who obtained medical care were 21.94 times as likely to report the event to police. Further, those who were assaulted by a stranger were 3.2 times more likely to report than those assaulted by someone known to them (note: other relationship variables, including [1] relative/non-relative, [2] friend/non-friend, and [3] romantic partner/not romantic partner, had large confidence intervals which prevented interpretation of additional levels of the variable). A greater desire to keep the event private reduced the likelihood of a report by about half ( $\text{Exp}(B)=.465$ ), as did stronger beliefs that the event was trivial or not important to police ( $\text{Exp}(B)=.521$ ). Lastly, those who viewed the event as less serious were less likely to report the event ( $\text{Exp}(B)=.803$ ), though it is noted that this variable lost significance when PCL scores were added to the model. These results confirm the importance of symptoms of posttraumatic stress in predicting whether an unwanted sexual experience is reported to police, and additionally indicate that different symptom profiles (i.e. differences between symptom clusters of PTSD) may lead to differing reporting decisions.

Due to group differences noted above, analyses were conducted again by (1) excluding participants from the college student sample, and by (2) excluding males. Due to relatively small numbers of college students and males, separate logistic regression analyses using just the participants in these groups alone was not possible.

Despite noted differences between the college student sample and those who accessed the survey through other community advertisements, no differences were observed in the results of the logistic regression analysis. Analyses with and without this group of respondents resulted in the same group of significant variables, with nearly identical odds ratios. This was also the case when data were analyzed using only female respondents.

## **Hypothesis 2**

Due to the use of both current and past (after event) PCL scores, those participants who indicated that less than 30 days had passed since the time of the event were excluded from analyses, resulting in a total group size of  $n=790$ . Cases with missing data on one or more variables were also excluded, leaving a total of 494 cases of data available for the final analysis. An analysis of missing data using Little's (1988) MCAR test indicated that values were missing completely at random,  $\chi^2(174) = 197.20, p = .110$ . Various demographic factors were first examined in order to verify that they were not related to the final outcome variable. None of the demographic variables of racial group,  $F(4, 579) = 1.43, p = .223$ , education level,  $F(6, 577) = 1.36, p = .228$ , occupational status,  $F(2, 578) = 1.84, p = .160$ , or marital status,  $F(5, 575) = 0.98, p = .431$ , were related to current levels of posttraumatic stress as revealed by one-way ANOVA analyses.

Data assumptions were examined to ensure generalizability of results. Though included in the original hypothesis, current scores on the DASS-21 (depression scale) and PTCI (negative cognitions about the self) were excluded from analysis due to potential

problems with multicollinearity with the dependent variable ( $r = .80$  and  $.78$  respectively). For other variables, multicollinearity was ruled out with Variance Inflation Factors all falling below maximum recommended levels of 10 (Myers, 1990 as cited in Field, 2009), and tolerance statistics above minimum values. A Durbin-Watson test verified the assumption of independence of errors. Visual inspection of scatterplots revealed no violations of the assumptions of linearity or homoscedasticity.

Stepwise multiple regression analyses were performed in order to explore the relationships between mental health, legal system, and situational variables and current levels of posttraumatic stress symptomology (as measured by the PCL). In order to predict current levels of PTSD symptomology (PCL), the first model included only the variables of the initial (after event) PCL score, and the number of days that had passed since the time of the event. As expected, days since event and past PCL score significantly predicted the individual's current PCL score,  $F(2, 552) = 153.99, p < .001$  ( $R^2 = .36$ ), with both variables significantly contributing to the model (see table 5). In order to examine the impact of legal system contact on current PCL scores, reporting status was added as a predictor on step two. As shown in Table 6, whether individuals notified police after the event was not related to current posttraumatic stress when controlling for the time since the event and initial posttraumatic stress ratings,  $F(3, 551) = 102.49, p = .873$  ( $\Delta R^2 < .001$ ). The third step of the model included several variables related to the legal system in addition to those included in steps one and two. These variables included (1) whether the individual was injured, (2) their initial impressions of the seriousness of the event, (3) post-event desire for privacy, (4) concerns about whether the police could keep them safe, and (5) whether the police would believe the event was important. Further, this stage of analysis also included (6) general impressions of the

legal system, as well as participants' current impressions of both (7) police detectives, and (8) prosecuting attorneys.

The addition of the legal system variables significantly impacted the model,  $F(11, 468) = 28.17, p < .001$  ( $\Delta R^2 = .046$ ) however a number of variables included did not provide a significant contribution. Due to lack of statistical significance, the following variables were removed from the model: (1) whether an injury was sustained or not, (2) beliefs about whether the police could keep them safe after the event, (3) whether the event was considered trivial, and (4) thoughts about prosecutors, and (5) police detectives. This was done by systematically removing the least significant predictor until all included variables were significant. The resulting model (see Table 7) included days since the event and the original level of PTSD symptomology (on step one), which accounted for 35.1 percent of the variance,  $F(2, 499) = 134.86, p < .001$ . The addition of police notification status on step two provided no significant addition to the model's predictability,  $F(3, 468) = 89.75, p = .847$  ( $\Delta R^2 < .001$ ). On step three, the participants' ratings of the seriousness of the event, whether they wanted privacy, and how they generally viewed the legal system accounted for an additional 4.3 percent of the variance ( $R^2 = .394$ ) in current PTSD symptom scores,  $F(6, 495) = 53.54, p < .001$ . The mental health variable of posttraumatic negative cognitions about the world was included in step four of the final model (see Table 8). With the exception of days since the event, general thoughts about the legal system, and police notification status, all variables remained significant. The addition of posttraumatic negative cognitions significantly improved the ability of the model to predict current PTSD symptom score,  $F(7, 486) = 75.58, p < .001$ , accounting for an additional 13 percent of the variance (Model  $R^2 = .521$ ). Due to their significance on step three of the model, the time since event and thoughts about the legal



system variables were retained despite losing significance after the addition of posttraumatic negative cognitions about the world. More specifically, higher initial PTSD symptom scores were associated with higher current scores on the same measure. Further, ratings showing a belief that the event was a crime and was more serious were related to higher symptom scores, while a stronger desire for privacy was related to higher levels of PTSD symptomology on the PCL-S. Lastly, greater levels of negative cognitions about the world were related to higher scores on the PTSD symptom measure (see Table 8).

Due to group differences noted above, identical analyses were conducted using only the sample of non-college students and only the sample of female participants. The analyses of data with college students removed resulted in the same variables of significance in the model, and nearly identical  $R^2$  values at each model stage. The results with females only were also nearly identical, and the amount of variance accounted for remained similar to prior analyses.

An additional exploratory multiple regression analysis was conducted in order to determine if, for those who reported the event to police, participation in various stages of the legal case would contribute to differences in PTSD symptom scores. Post-event PTSD symptom score was accounted for on step one of the analysis, with five dichotomous legal system participation variables included on step two. None of the legal system variables, including whether or not a respondent (1) participated in the legal process at all, (2) participated in the police investigation or not, (3) participated in the trial process or not, (4) testified in court, or (5) participated in a sentencing hearing, contributed to the prediction of current PTSD symptom scores. These variables cumulatively accounted for just 2.7 percent of the variance in the dependent variable.

This relationship was examined further with individual independent-samples t-tests. With regard to current PTSD symptom score, those who participated in no part of the legal process (n=15) did not significantly differ from those who did (n=74),  $t(87) = .502$ ,  $p = .617$ . Similar results were obtained when comparing those who participated in the police investigation (n=68) to those who did not (n=21),  $t(87) = .287$ ,  $p = .775$ , and when comparing those who participated in the trial (n = 26) to those who did not (n=63),  $t(87) = -1.349$ ,  $p = .181$ . Further, those who testified in court (n=20) did not differ in current PTSD symptom scores when compared to those who did not (n=68),  $t(86) = -.180$ ,  $p = .858$ , and those who participated in the sentencing hearing (n=11) were not significantly different from those who did not do so (n=79),  $t(88) = -1.241$ ,  $p = .218$ .

### **Discussion**

The current study first aimed to explore factors which may predict whether individuals decide to report unwanted or forced sexual experiences. In particular, as much research has been conducted on how various aspects of the event and victims' perceptions (e.g. serious or not) contribute to this decision, this study examined to what degree various cognitive and affective influences affect the likelihood of notifying police. Partial support was found for hypothesis one. As predicted, individuals who received medical attention following the event were more likely to have notified police afterward. Further, those who were assaulted by a stranger (as opposed to someone known to them) were more likely to notify police. Ratings on a number of variables related to victims' impressions of the event (in the two days afterward) and their impressions of the potential police response were also collected. Those victims who recalled a greater desire for privacy following the unwanted sexual experience were less likely to notify police, as were those who perceived the event as more trivial. Additionally, victims who felt

afterward that the event was a crime and that it was serious were more likely to file a police report. Results however did not support the hypothesis that concern for the safety of oneself or family would predict reporting status.

These results are largely consistent with prior studies regarding crime reporting behavior. Authors have previously suggested that whether an event is reported to police may be decided by a variety of “cost-benefit” (Gottfredson & Gottfredson, 1988, p. 25) factors related to thoughtful decision making, and a variety of costs and benefits have indeed been found to affect the choice of whether to notify police. Similar to past research (Bachman, 1998; Felson et al., 2002; Wolitzky-Taylor et al., 2011), this investigation found that those who wish to keep an unwanted or forced sexual experience private are less likely to call the police to report the event. Furthermore, the desire for privacy can be linked to their relationship with the offender, the nature of the assault, and whether they seek medical care. Also, if crime survivors perceived the event to be trivial or of little importance (to police), they were less likely to notify law enforcement. Closer analysis revealed that knowing the perpetrator, lack of penetration during the event, and not having sought medical care were each related to ratings on this scale. Further, not perceiving the event as a crime or viewing it as less serious, ratings which were heightened when the victim knew the perpetrator, when sexual penetration did not occur, and if they were not injured or did not seek medical care, also decreased the odds of a report being filed. The finding that those who were assaulted by someone known to them were less likely to report to police (when compared to a stranger) is consistent with past studies. As discussed in prior literature, victims of crime may choose not to report events to law enforcement due to either their attachment to the perpetrator (Felson et al., 2002), or possibly for concerns related to children or financial dependence (Pagelow, 1984).

Additionally, a sexual assault with a stranger as the perpetrator may be more easily defined as a crime due to stereotypes and myths surrounding sexual assault as a stranger-perpetrated event (Wolitzky-Taylor et al., 2011).

This study found a significant impact of mental health symptomatology on decisions to report; a variable previously not accounted for in studies of reporting behavior. Overall, the addition of various cognitive and affective measures provided mixed results. Ratings of post-event depressive symptoms did not predict for differences in reporting status, nor did ratings of negative cognitions about the self or the world. However, some support was found for the inclusion of one mental health variable, as scores on a measure of PTSD symptomatology (PCL) indicated that increases in post-event PTSD-related distress were related to a higher likelihood of a police report. The analysis of the effects of individual PTSD symptom clusters (i.e. re-experiencing, avoidance, and hyperarousal) revealed more complex results. Specifically, it was found that although more severe levels of post-event PTSD re-experiencing and hyperarousal symptoms increased the likelihood of a police notification, greater levels of post-event PTSD avoidance symptoms decreased the likelihood of a police report.

These results shed light on the importance of accounting for mental health variables in studies of crime reporting behavior. In particular, although the results of this study suggest that a “cost-benefit analysis” (Gottfredson & Gottfredson, 1988, p. 25) framework may correctly characterize a portion of the influence on crime-reporting behavior, those suffering from PTSD symptomatology may make differing decisions based upon their experience of these symptoms. The re-experiencing symptoms of PTSD can include unwanted memories/nightmares of the event, flashbacks, or emotional/physiological reactions to reminders related to the traumatic event (APA,

2000). Hyperarousal symptoms may include irritability, trouble sleeping or concentrating due to the heightened arousal after the event, and an exaggerated startle response with a greater than usual concern about safety (APA, 2000). These reactions may be stronger in those who experience an event of greater severity, and may therefore increase the likelihood of a report. The severity of the event may also lead the individual to believe that the event was serious and worthy of a report. Further, some of these symptoms are similar to fear reactions, which prior authors have suggested may lead to a greater likelihood of police notification (Singer, 1988; Wolitzky-Taylor et al., 2011).

Avoidance symptoms of PTSD had an opposite effect, making crime reporting less likely to occur. Avoidance symptoms may include avoiding people or places that remind the person of the event, avoiding thoughts/feelings and conversations about it, loss of interest in previously enjoyed activities, feelings of detachment from others, difficulty experiencing emotions or remembering aspects of the event, and thoughts of a foreshortened future. Those who wish to avoid thoughts, feelings, conversations, people, or places that remind them of the event may therefore neglect to notify police simply because doing so would force them to confront things which they are attempting to avoid. Loss of interest in activities and feelings of detachment or estrangement from others may lead to depression and difficulty initiating activities such as calling the police. Similarly, thoughts of a foreshortened future may reduce the perceived benefit of reporting the event. For those whose avoidance symptoms include difficulty remembering important parts of what happened, they may elect not to notify police due to the perception that they cannot fully recall what happened, and therefore would not be able to provide police with necessary information. Generally, as some theories of PTSD have suggested that the disorder is likely to be more prevalent in survivors who do not adequately process the

memory of the traumatic event (Ehlers & Clark, 2000; Foa & Cahill, 2001), heightened avoidance symptoms provide for a concerning prognosis.

The second aim of this study was to examine the effects of past legal system participation on levels of present distress. Prior literature suggests that contact with law enforcement or participation in the legal process would result in more severe levels of PTSD. Despite this assertion, current ratings of PTSD symptoms were largely not affected by legal system variables. As predicted in hypothesis two, greater current levels of PTSD symptomatology were related to (1) higher initial (post-event) symptom scores on the same measure, and (2) more negative post-event cognitions about the world. Contrary to the hypothesized relationships, (1) having sustained an additional injury at the time of the event was not related to current PTSD symptom score when the post-event score was accounted for, and (2) whether the event was reported to police was also not related. Further, (3) respondents' ratings of and satisfaction with legal system personnel (i.e. police or prosecutors) were not related to the current PTSD score, and (4) negative thoughts about the legal system in general lost significance when posttraumatic negative thoughts about the world were accounted for. This last finding suggests that those who provided more negative ratings of the legal system in general were prone to a more negative response style when faced with broad questions about the legal system. This was underscored by the fact that more specific ratings of police detectives and prosecutors were not significantly related to the outcome. Exploration of additional legal system variables yielded similar results. In particular, (5) beliefs about whether the police could keep the crime survivor safe immediately after the event, and (6) whether police would take the event seriously (post event) did not affect current PTSD symptom

scores. Overall, little evidence was found of negative thoughts about the legal system having an impact on current PTSD symptom scores.

Upon examination of those who had reported the event to police and were exposed to the legal system, participation in various stages of the legal system process was not related to a difference in PTSD symptom scores. Respondents who denied participating in any stage of the legal process did not differ from those who did, and the same results were found when comparing groups who participated in the police investigation with those who did not. Participating in a criminal trial was not related to symptom scores, nor was testifying in court or participating in a sentencing hearing. Those variables related to the legal system which accounted for variance in current PTSD symptom scores were a desire for privacy following the event, and the perceived seriousness of that event. Yet, as noted above, these ratings were taken to reflect how an individual reacted immediately after the unwanted sexual experience took place, and did not reflect actual impressions of the legal system or legal system personnel.

Although some literature discusses evidence of “retraumatization” (Orth & Maercker, 2004, p. 213) related to criminal justice system involvement (Bohmer & Blumberg, 1975; Campbell, 2008; Campbell et al., 1999; Madigan & Gamble, 1991), there are also conflicting reports which fail to find evidence of this phenomenon (Frazier & Haney, 1996). Much of the literature failing to find evidence of “retraumatization” (Orth & Maercker, 2004, p. 213), however, utilizes data derived from those who are already involved with the criminal justice system or with victim advocacy groups, and does not compare those who report the crime to those who do not. One conflicting study comparing reporters to non-reporters found that the majority of those who reported a sexual assault to police were satisfied with their interaction with law enforcement, with

over nine in ten of those respondents stating that they were pleased with their decision to report (Wolitzky-Taylor et al., 2011).

Orth and Maercker (2004) defined “retraumatization” as a “significant increase in the frequency of posttraumatic stress reactions to the original trauma,” (p. 213). The current study failed to find evidence of this effect, and overall, the results of the present investigation are in direct contrast to writings positing that participation in the legal system process may worsen symptoms of posttraumatic stress in survivors of sexual assault. Not only were no differences discovered between those who reported the event to police and those who did not, but among those who were involved in the legal system, PTSD symptoms did not differ between those who had participated in various stages of the case. Thus, the results of this study suggest that heightened PTSD symptomology in assault survivors involved with the legal system is not attributable to that legal system contact.

As reporting rates have continued a gradual rise for the past several years (Baumer & Lauritsen, 2010), the absence of PTSD symptom consequences (following a report) found in this investigation is encouraging, though does not necessarily indicate that survivors of earlier sexual assaults would have avoided heightened levels of distress related to their participation in the legal system. This investigation failed to gather substantial data from those who were involved in the legal system prior to the past 15 years. It is possible that victims of earlier sexual assaults may have experienced “retraumatization” (Orth & Maercker, 2004, p. 213), particularly in cases occurring prior to rape law reforms in effect today. As discussed by Horney and Spohn (1991), modern rape laws have been altered to include males as potential victims, and spouses as potential perpetrators. These reforms have eliminated the need for the victim of the assault to produce an eyewitness in



order to prove their claim (Horney & Spohn, 1991). In consideration of the potential impacts of these changes, future research is needed to examine whether reporting of sexual assault to the police would have produced heightened symptoms of post-traumatic stress for victims of earlier sexual assaults, and whether the changes in these laws have impacted the severity of posttraumatic stress symptoms following judicial proceedings.

The present examination also included two time points of measurement for PTSD and other symptomatology by gathering data from participants about their reaction in the two days after the event (retrospectively) and again at the time of their participation. Analyses revealed that those participants with higher overall PTSD symptomatology were more likely to have reported the event to police. Thus, the notion that assault victims who are involved in the legal system may experience greater distress than those who do not, may in fact be true, but this greater level of total PTSD symptomatology may have been a preexisting factor which contributed to their reporting the event to police, and not a result of legal system participation.

### **Policy Implications**

Aside from the variety of social, occupational, and psychological costs that victimization exacts from individuals who experience a sexual assault, there are many costs to society (see Anderson, 1999 for a review). In particular, a diagnosis of PTSD has been reported to result in a substantial increase in health care costs, above the level resulting from many other mental health conditions (Marciniak et al., 2005). Each of the 53 US states and territories participates in a Crime Victim Compensation (CVC) program, intended to provide financial assistance for victims of crime, including assistance with the cost of mental or medical health care. Yet, eligibility for benefits from CVC and other programs often require that the crime be reported to law enforcement agencies. Not

all programs require police notification in order for individuals to be eligible, however in the case of CVC, nearly half of states (45.3 percent) require a report within three days of the event (NACVCB, 2009), and the vast majority (79.2 percent) of states require a report within a week (NACVCB, 2009).

As this study has illustrated the significance of mental health symptomatology in contributing to reporting decisions, policy implications are raised. In one respect, the results indicate that greater PTSD symptoms may raise the likelihood of a police report being filed. In the case of this investigation, more severe re-experiencing and hyperarousal symptoms of PTSD contributed to a greater level of police reporting. Yet, symptoms of avoidance appear to act as a barrier to reporting. Thus, if an individual who experienced significant avoidance symptoms following the event wishes later to obtain mental health services related to their victimization they may be ineligible for CVC benefits. In essence, they would be denied compensation to cover the cost of mental health care due (in part) to symptoms of a mental health condition directly related to the crime they experienced.

In consideration of the substantial cost that PTSD has on individuals and on society, there may be a public benefit for either extending the time window for the required police report, or waiving the reporting requirement for those wishing to apply for CVC benefits. Doing so would be unlikely to adversely affect those who report within particular time frames, and could provide significant benefits to those with greater avoidance symptoms. The results showing that some symptoms of PTSD (i.e. hyperarousal and re-experiencing symptoms) increase the likelihood of police notification suggest that those seeking CVC benefits for care secondary to PTSD symptoms are likely to be eligible. However the additional results showing that avoidance symptoms reduce the likelihood of a police

report may be even more significant when prominent trauma recovery models are considered. As suggested by Foa and Cahill (2001), in order for individuals to recover from traumatic events, they must integrate new information gleaned from the trauma with existing schema. In particular, as the event may have caused them to think that, for example, other people are dangerous or that they are unable to adequately protect themselves, a return to normal functioning may be contingent on producing evidence against those thoughts. Yet, according to Foa and Cahill (2001), in order to prove these thoughts false, victims must confront and test them. This can be done in a variety of ways, but requires the individual to overcome avoidance symptoms through repeated recall of the traumatic memory or by speaking about the event with other individuals. Failure to process the traumatic memory fully, as would be expected in those with heightened avoidance symptoms, may lead to a more chronic course of PTSD (Foa & Cahill, 2001). Therefore, it may be the case that those victims with greater avoidance symptoms and therefore a stronger potential for chronic PTSD are also those who are most likely to be denied CVC benefits due to failure to file a police report. With this point in mind, expansion of the time limits or removal of the police notification criteria may be of benefit to victims of these crimes, and also to the larger society who often bears the burden of the associated costs.

Further supporting the need for revision of the CVC crime reporting time limits is the finding that victims of sexual assault have highest rates of severe psychological distress or other problems in the days immediately following the event (Rothbaum et al., 1992). At times when stress is particularly high, as in those experiencing significant symptoms of avoidance following a sexual assault, individuals may not consider all of the options available to them, and may experience impairment in various areas, including their

decision-making capacity (Niedenthal & Kitayama, 1994). Thus the time window requirement for reporting may be particularly problematic. If crime victims' symptoms of distress (and avoidance) fade over time, and are highest in the two days immediately following the event, individuals may impulsively decide not to report the event immediately afterward. However, as past literature suggests that the distress experienced by many individuals following a traumatic event will, in most cases, naturally fade (Litz & Maguen, 2007), it is possible that individuals could reconsider their decision later on. Yet if more than a few days have passed, they would (in most states and territories) be unable to receive CVC benefits even if they reconsider and decide to notify police. From the perspective of a "cost-benefit analysis" (Gottfredson & Gottfredson, 1988, p. 25), those who desire mental health services following the event, may decide that there is no benefit to filing a later police report, since they would be unable to obtain CVC compensation for mental health services. If they continue to experience significant impairment due to symptoms of psychological distress, and are unable to afford appropriate mental health care, those individuals and the larger society may continue to absorb the costs of these events.

Another consideration is whether those who wish to apply for CVC benefits should be required to file a police report at all. Although it may be argued that victims of crime should not be forced to report the crime in the mandated time frame because participation in the legal system has been suggested to further increase distress or to subject individuals to "retraumatization" (Orth & Maercker, 2004, p. 213), this study failed to find support for this notion. Despite the likelihood that some survivors of sexual assault have and will have difficult and unsatisfying interactions with the legal system or criminal justice system personnel, the results of this study suggest that those experiences,

while relevant and in need of a solution, are not systemically-based. Neither those who reported nor those who did not report to police experienced worse symptoms later on when the immediate affective response to the event was accounted for. This was also true among those more deeply involved in the legal system, as participation in various trial stages (or not) also was not related to differences in later PTSD scores.

Despite these results, victims of sexual assault may wish to forgo a police report for a variety of other reasons. As noted above, they may have a particular interest in protecting the perpetrator (Felson et al., 2002), or may have other concerns (Pagelow, 1984). Further, the criminal justice system may not offer justice in the way crime victims would wish. Some researchers have suggested that greater satisfaction for victims may result from proceedings based on “restorative justice” (Sherman & Strang, 2007, p. 8) models, as traditional methods of justice can appear confusing, unfair, or as lacking the justice the victim desires (Parsons & Bergin, 2010). Of greater concern, however, is the dearth of public knowledge about the full benefits of reporting crimes to the police, including eligibility for CVC benefits. In the present study, just 15 percent of participants who did not report the event to police reported awareness of the CVC program, and nearly 34 percent expressed that they would have been more likely to notify police if they had been aware of the available benefits. Close to half of the respondents also reportedly felt the need for counseling after the event, but just a quarter actually attended services.

In addition to lengthening the time limit or abolishing the reporting requirement, the use of a public awareness campaign about CVC may result in substantial benefits to crime victims. Beyond acting to raise knowledge about available CVC services, better public awareness of these services may result in higher rates of police notification. This

action alone might significantly reduce the societal cost of chronic PTSD by providing benefits to a greater number of victims of violent crimes such as sexual assault.

### **Limitations**

This study had a number of limitations worthy of noting. First, in order to collect information about individuals' reactions immediately following (i.e. in the two days after) the unwanted or forced sexual experience, retrospective data collection was used. Participants were instructed multiple times to think about the period following the event, being continually reminded that the measure was asking about a prior time period. Although the differences between post-event and current symptoms scores suggested that participants were aware of the instructions, the possibility remains that some participants did not fully read the text of questions. Control questions were utilized to identify sources of random responding, and only a small number of participants were identified as doing so. Further, the use of retrospective data collection raises concern about the accuracy of participant responses. In particular, for those who experienced an event multiple years prior to their participation, it is unknown how accurately they recall their immediate reactions to the event. It is also unknown if the respondents' current level of distress (at the time of participation) may have affected their recall of prior distress (e.g. if low current distress levels contributed to perception of lower distress in the time after the event). This is noted as biases in respondent perception could potentially influence the result of analyses. However, retrospective data collection has been used in one prior study of a similar nature, which compared participant retrospective ratings of distress to the retrospective ratings of those who knew them at the time of victimization. This study suggested that retrospective collection of data about reactions to a crime are accurate

when compared to the ratings of someone familiar with the participant's reaction (Greenberg & Beach, 2004), potentially reducing the significance of this limitation.

As online data collection was utilized, researchers are unable to verify the accuracy of participant responses. There is no way of ensuring that all participants responded to all items accurately, though this is also true of in-person research. Further, although the survey did not allow for more than one response per computer and disqualified participants who indicated that they had taken the survey previously, it is possible a participant could have taken the survey more than once if doing so from separate computers. This outcome is presumed to be unlikely.

This study did not procure enough data in order to conduct separate logistic regression and multiple regression analyses using the group of male participants alone. Although results were nearly identical when using data from all participants compared to that of females only, it is possible that a larger sample of males would provide results significantly different from those observed in this predominantly female sample.

Results were additionally limited by the fact that the assessment of post-assault and current mental health symptoms was not exhaustive. Researchers focused on measures of PTSD, depressive symptomatology, and posttraumatic cognitions. As a history of trauma or PTSD can be comorbid with other mental health conditions, examination of symptoms related to those different conditions would have produced further results for interpretation. Additionally, a number of participants indicated having had multiple unwanted or forced sexual experiences. Some also endorsed having experienced other potentially traumatic events. Thus, it cannot be definitively stated that post-event ratings are the direct result of one unwanted or forced sexual experience, though participants were instructed to make ratings based only on the most recent (if more than one) unwanted sexual experience. In

spite of this instruction, it is possible that traumatic events which occurred prior to the unwanted sexual experience may have influenced original reactions to the event.

Alternatively, for those who were subjected to other traumatic events since the most recent unwanted or forced sexual experience, current ratings of distress may have been affected. Data were not collected regarding the time frame of other traumatic events experienced, and therefore this possibility cannot be entirely ruled out. Of note, though participants were recruited based on having experienced an unwanted or forced sexual event, the data do not allow for verification that actual illegal activity occurred.

Advertisement wording which asked for participants to respond regarding (1) unwanted and forced sexual experiences and (2) their perception of the legal system may have assisted in reducing the number of respondents who were not the victims of illegal activity. Lastly, no data were collected with regard to respondents' past experiences with the criminal justice system or legal system personnel. Prior interactions with these systems may have influenced participant responses to items regarding the legal system, however data are not available to verify or rule out this possibility.

### **Future Directions**

Despite the limitations stated above, the present study revealed a number of important findings. Most notably, the immediate post-event PTSD symptomatology common in survivors of sexual assault (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993) appears to have a direct effect on whether an unwanted or forced sexual experience is reported to police. In particular, high levels of avoidance symptoms reduce the likelihood of a report, while hyperarousal and re-experiencing symptoms increase that likelihood. It will be important for future examinations to take into account the mental health of the survivors of these events in discussions of factors in reporting decisions.



Further, participation in the legal system was generally not found to negatively impact the future PTSD symptomatology in survivors of unwanted sexual experiences when post-event PTSD symptoms were accounted for. As a result, future research should control for immediate post-event PTSD symptomatology in discussions of the legal system and hypothesises surrounding “retraumatization” (Orth & Maercker, 2004, p. 213).

It would be beneficial for future research to verify the findings of these results with survivors of other types of violent crimes. Though sexual assault has been reported to be more likely than other offenses to result in posttraumatic stress (Breslau, et al., 1991), other violent crimes also can cause significant symptoms (Norris, 1992), which could potentially impact reporting decisions. Further, other mental health variables aside from those measured by this study (i.e. PTSD, depression, posttraumatic cognitions) may be worthy of exploration in order to further understand the decisions that survivors of crime make about notifying police.

This study was also unable to gather enough data from male respondents to make meaningful comparisons between how men and women may differ with regard to factors impacting their crime reporting behavior. Additionally, the present investigation focused primarily on how either reporting the event or not may be related to future levels of distress. Further analyses compared those who had participated in various stages of the legal process to those who had not. Future research would benefit from additional attention to specifically negative experiences at each of these trial stages, in order to determine if negative reactions from others at particular stages (e.g. family, friends, law enforcement, attorneys) may impact later distress. Additionally, this study failed to find a link between reporters and non-reporters, and between those who participated in various legal stages and those who did not on levels of later PTSD symptomatology. Future

examinations of other potential negative outcomes would more fully illustrate the impact, or lack thereof, of legal system participation. Future studies examining the relationships between mental health symptomatology and legal system variables will continue to enhance our understanding of how best to assist those harmed by violent crime. In particular, literature must focus on how available public services (i.e. CVC) can be tailored to match the needs of those they are intended to serve.

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Table 1

Rotated factor loadings for the Reasons for Calling the Police Questionnaire – Form A  
(Non-reporter sample)

<u>Item</u>	<u>Seriousness</u>	<u>FACTOR</u>		
		<u>Safety</u>	<u>Privacy</u>	<u>Triviality</u>
The unwanted or forced sexual experience was not a crime (item #1)	<b>.845</b>	.163	-.090	-.164
What the offender did was not illegal (#9)	<b>.826</b>	.147	-.149	-.154
I didn't want the offender to be punished for what they did (#5)	<b>.772</b>	.065	.089	-.191
I didn't think the event was serious (#14)	<b>.719</b>	-.163	-.076	.228
I didn't think the unwanted or forced sexual experience was important (#7)	<b>.711</b>	-.091	-.020	.211
I didn't know if the unwanted or forced sexual experience was serious (#19)	<b>.673</b>	-.088	.130	.151
I didn't think the police could protect me from the offender (#4)	.043	<b>.848</b>	-.042	.086
The police wouldn't stop the unwanted or Forced sexual experience from happening to me again (#3)	.211	<b>.797</b>	-.010	.052
I didn't think the police would keep me safe (#10)	-.082	<b>.740</b>	-.052	.237
I was afraid the perpetrator would harm me or my family if I reported the event to police (#20)	-.142	<b>.564</b>	.277	-.106
I didn't want anyone to know what happened to me (#18)	.020	.035	<b>.842</b>	-.116
I didn't want to make the unwanted or forced sexual experience public (#12)	-.032	.049	<b>.820</b>	-.003
I was embarrassed (#8)	-.184	-.053	<b>.678</b>	.161
I felt the unwanted or forced sexual experience was a private matter (#16)	.413	.012	<b>.529</b>	.005
I didn't think the police would take the event seriously (#13)	-.103	.146	-.008	<b>.855</b>
I did not think the police would care about the event (#17)	-.063	.189	-.046	<b>.839</b>
The police are busy with more important things (#15)	.326	-.122	.134	<b>.590</b>

Table 2

Rotated factor loadings for the Reasons for Calling the Police Questionnaire – Form B (Reporter sample)

<u>Item</u>	<u>FACTOR</u>			
	<u>Seriousness</u>	<u>Safety</u>	<u>Privacy</u>	<u>Triviality</u>
The unwanted or forced sexual experience was a crime (item #1)	<b>.862</b>	-.040	-.031	.007
What the offender did was illegal (#9)	<b>.918</b>	-.067	.028	-.098
I wanted the offender to be punished for what they did (#5)	<b>.683</b>	-.050	-.030	.203
I thought the event was serious (#14)	<b>.804</b>	-.005	-.064	.103
I thought the unwanted or forced sexual experience was important (#7)	<b>.522</b>	.170	.128	-.208
I knew the event was serious (#19)	<b>.886</b>	.029	-.024	-.026
I thought the police could protect me from the offender (#4)	-.093	<b>.919</b>	-.003	.008
The police would stop the unwanted or forced sexual experience from happening to me again (#3)	-.060	<b>.895</b>	-.009	-.127
I thought the police would keep me safe (#10)	.132	<b>.767</b>	-.020	.039
I thought the police would protect me from the offender if I reported the event to police (#20)	.113	<b>.613</b>	-.036	.252
I wasn't worried about others knowing what happened to me (#18)	.050	.061	<b>.863</b>	.024
I wasn't worried about making the unwanted or forced sexual experience public (#12)	.068	-.053	<b>.879</b>	.084
I wasn't embarrassed (#8)	-.240	-.089	<b>.685</b>	-.005
I wasn't worried about keeping the event private (#16)	.108	.033	<b>.904</b>	-.046
I thought the police would take the event seriously (#13)	.074	-.082	-.015	<b>.919</b>
I thought the police would care about the event (#17)	-.161	.120	.078	<b>.895</b>
The police would think the unwanted or forced sexual experience was serious (#15)	.025	-.035	-.008	<b>.897</b>

Table 3

Logistic regression analyzing likelihood of reporting behavior with legal system, event characteristic, and total PCL score variables accounted for

	B	SE	Odds Ratio	95% CI	
				Lower	Upper
<b>Step 1</b>					
Constant	<b>2.004*</b>	.742	7.421		
RCP-Privacy	<b>-.587**</b>	.176	.556	.394	.784
RCP-Trivial	<b>-.625**</b>	.172	.535	.382	.750
RCP-Serious	<b>-.527*</b>	.201	.590	.398	.876
Rel.-Stranger	<b>1.456*</b>	.411	4.287	1.915	9.596
Rel.- Friend	-.107	.516	.898	.327	2.469
Rel.- Partner/Spouse	-.021	.506	.980	.363	2.644
Rel.-Relative	-.367	.651	.693	.193	2.483
Medical Care	<b>3.005**</b>	.338	20.177	10.397	39.158

Note: R<sup>2</sup> = .34 (Cox & Snell), .60 (Nagelkerke). Model  $\chi^2$  (8) = 276.14, p < .001.

\*p < .01; \*\*p < .001

**Step 2**

Constant	.401	.962	1.494		
RCP-Privacy	<b>-.717**</b>	.186	.488	.339	.703
RCP-Trivial	<b>-.670**</b>	.173	.511	.364	.718
RCP-Serious	-.271	.218	.763	.497	1.170
Rel.-Stranger	<b>1.384**</b>	.417	3.991	1.762	9.038
Rel.- Friend	-.184	.525	.832	.297	2.329
Rel.- Partner/Spouse	-.133	.514	.875	.320	2.398
Rel.- Relative	-.619	.668	.538	.145	1.995
Medical Care	<b>2.906**</b>	.343	18.276	9.330	35.800
PTSD Score (PCL)	<b>.030*</b>	.011	1.030	1.007	1.054

Note: R<sup>2</sup> = .35 (Cox & Snell), .62 (Nagelkerke).

Model  $\chi^2$  (9) = 283.23, p < .001. Step  $\chi^2$  (1) = 7.08, p = .008.

\*p < .01; \*\*p < .001



Table 4

Logistic regression results analyzing likelihood of reporting behavior with legal system, event characteristic, and individual PCL symptom cluster variables accounted for

	B	SE	Odds Ratio	95% CI	
				Lower	Upper
<b>Step 1</b>					
Constant	<b>2.203*</b>	.726	9.056		
RCP-Privacy	<b>-.626**</b>	.174	.535	.380	.751
RCP-Trivial	<b>-.628**</b>	.171	.534	.381	.747
RCP-Serious	<b>-.529*</b>	.201	.589	.397	.874
Rel.- Stranger	<b>1.409**</b>	.408	4.092	1.840	9.099
Rel.- Friend	-.130	.514	.878	.321	2.407
Rel.- Partner/Spouse	-.062	.504	.940	.350	2.524
Rel.- Relative	-.387	.652	.679	.189	2.437
Medical Care	<b>2.989**</b>	.338	19.861	10.239	38.526

Note: R<sup>2</sup> = .34 (Cox & Snell), .60 (Nagelkerke). Model  $\chi^2$  (8) = 278.53, p < .001.

\*p < .01; \*\*p < .001

**Step 2**

Constant	.340	.989	1.405		
RCP-Privacy	<b>-.765**</b>	.185	.465	.324	.668
RCP-Trivial	<b>-.653**</b>	.176	.521	.369	.734
RCP-Serious	-.219	.223	.803	.519	1.243
Rel.- Stranger	<b>1.171*</b>	.429	3.224	1.390	7.480
Rel.- Friend	-.410	.535	.664	.232	1.896
Rel.- Partner/Spouse	-.150	.512	.861	.316	2.350
Rel.- Relative	-.665	.672	.514	.138	1.919
Medical Care	<b>3.088**</b>	.368	21.936	10.663	45.126
Re-experiencing (PCL)	<b>.117*</b>	.052	1.124	1.014	1.245
Avoidance (PCL)	<b>-.085*</b>	.041	.918	.848	.995
Hyperarousal (PCL)	<b>.100*</b>	.051	1.106	1.001	1.221

Note: R<sup>2</sup> = .36 (Cox & Snell), .63 (Nagelkerke).

Model  $\chi^2$  (11) = 295.69, p < .001. Step  $\chi^2$  (3) = 17.17, p = .001.

\*\*p < .01; \*p < .05

Table 5

Multiple regression results analyzing impact of days since event and original PTSD symptom scores on current PTSD symptom scores

	B	Std. Error B	$\beta$	R <sup>2</sup>
<u>Step 1</u>				<b>.358</b>
Constant	8.924	2.060		
Days since event	-.001	.000	<b>-.104**</b>	
PCL total score	.588	.034	<b>.593***</b>	

Note: \*\*\* $p \leq .001$ ; \*\* $p \leq .01$ ; \* $p \leq .05$ .

Table 6

Multiple regression results analyzing impact of reporting status on current PTSD symptom scores when controlling for time since event and post-event PTSD symptoms

	B	Std. Error B	$\beta$	R <sup>2</sup>
<u>Step 1</u>				<b>.358</b>
Constant	8.924	2.060		
Days since event	-.001	.000	<b>-.104**</b>	
PCL total score	.588	.034	<b>.593***</b>	
<u>Step 2</u>				<b>.358</b>
Constant	8.942	2.065		
Days since event	-.001	.000	<b>-.103**</b>	
PCL total score	.587	.035	<b>.592***</b>	
Reporting status	.281	1.761	.006	

Note:  $\Delta R^2 < .001$  for Step 2 ( $p < .873$ ).  
 \*\*\* $p \leq .001$ ; \*\* $p \leq .01$ ; \* $p \leq .05$ .

Table 7

Multiple regression results analyzing impact of legal system variables on current PTSD symptom scores

	B	Std. Error B	$\beta$	R <sup>2</sup>
<u>Step 1</u>				<b>.351</b>
Constant	9.015	2.200		
Days since event	-.001	.000	<b>-.098**</b>	
PCL total score	.587	.036	<b>.588***</b>	
<u>Step 2</u>				<b>.351</b>
Constant	9.040	2.206		
Days since event	-.001	.000	<b>-.097**</b>	
PCL total score	.585	.037	<b>.586***</b>	
Reporting status	.366	1.892	.007	
<u>Step 3</u>				<b>.394</b>
Constant	24.316	5.097		
Days since event	-.001	.000	<b>-.078*</b>	
PCL total score	.648	.042	<b>.649***</b>	
Reporting status	-1.396	2.028	-.027	
Legal System-General	-2.968	.867	<b>-.122***</b>	
RCP-Seriousness	1.872	.760	<b>.103*</b>	
RCP-Privacy	-3.851	.857	<b>-.178***</b>	

Note:  $\Delta R^2 < .001$  for Step 2 ( $p < .847$ ),  $\Delta R^2 = .043$  for Step 3 ( $p < .001$ ).

\*\*\* $p \leq .001$ ; \*\* $p \leq .01$ ; \* $p \leq .05$ .

Table 8

Multiple regression results analyzing impact of legal system and mental health variables on current PTSD symptom scores

	B	Std. Error B	$\beta$	R <sup>2</sup>
<b>Step 1</b>				<b>.346</b>
Constant	9.256	2.222		
Days since event	-.001	.000	<b>-.103**</b>	
PCL total score	.583	.036	<b>.584***</b>	
<b>Step 2</b>				<b>.346</b>
Constant	9.314	2.229		
Days since event	-.001	.000	<b>-.102**</b>	
PCL total score	.579	.038	<b>.580***</b>	
Reporting status	.734	1.912	.014	
<b>Step 3</b>				<b>.390</b>
Constant	25.125	5.129		
Days since event	-.001	.000	<b>-.082*</b>	
PCL total score	.639	.042	<b>.640***</b>	
Reporting status	-1.066	2.047	-.021	
Legal System-General	-3.037	.875	<b>-.125***</b>	
RCP-Seriousness	1.794	.767	<b>.099*</b>	
RCP-Privacy	-3.857	.861	<b>-.179***</b>	
<b>Step 4</b>				<b>.521</b>
Constant	10.526	4.721		
Days since event	-.001	.000	-.060	
PCL total score	.474	.040	<b>.475***</b>	
Reporting status	-1.222	1.815	-.024	
Legal System-General	-1.348	.790	-.056	
RCP-Seriousness	1.766	.680	<b>.097**</b>	
RCP-Privacy	-3.951	.764	<b>-.184***</b>	
PTCI-World	4.223	.366	<b>.410***</b>	

Note:  $\Delta R^2 < .001$  for Step 2 ( $p < .701$ ),  $\Delta R^2 = .044$  for Step 3 ( $p < .001$ ),  $\Delta R^2 = .131$  for Step 4 ( $p < .001$ ).  
 \*\*\* $p \leq .001$ ; \*\* $p \leq .01$ ; \* $p \leq .05$ .

APPENDIX A

Advertisements used for participant recruitment

Advertisement A (webpage posting)

Have you had an uncomfortable or unwanted sexual experience? If so, we want to hear about your reactions to it, and about your experiences with the criminal justice system. Those who complete the survey may enter to win a \$100 gift card from [www.amazon.com](http://www.amazon.com).

If interested, please click the link below to continue to the survey.

Advertisement B (webpage posting)

Have you had an uncomfortable or unwanted sexual experience? If so, we want to hear about your reactions to it, and about your thoughts about the criminal justice system. Those who complete the survey may enter to win a \$100 gift card from [www.amazon.com](http://www.amazon.com).

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