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Gender Differences in Depression and Alcohol Abuse Responses to Sexual Assault

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GENDER DIFFERENCES IN DEPRESSION AND ALCOHOL ABUSE
RESPONSES TO SEXUAL ASSAULT

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Applied Sociology

by
Lindsey Rae Hutton
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Accepted by:
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ABSTRACT

I examined reactions, specifically depression and alcohol abuse, of both male and female sexual assault victims with survey data from the National Violence Against Women Survey. I compared victims of both attempted and completed sexual assault with nonvictims in their development of both depression and alcohol abuse. I also examined the level of traumatic characteristics of the assault and its relation to the development of depression and alcohol abuse. I studied gender in all of these relationships as a possible moderator. Both male and female victims develop depression more often than nonvictims. Female attempted sexual assault victims develop problems with alcohol more often than nonvictims. Gender does not moderate either of these relationships. The characteristics of the assault do not have an effect on the depressive or alcohol abuse responses of male or female victims. These findings partially support the hypotheses.

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CHAPTER ONE

INTRODUCTION

Some estimates state that almost 18 million women and 3 million men in the United States have been sexually assaulted at some point in their lifetimes, and many of these victims suffer serious mental health consequences due to this victimization (Tjaden and Thoennes 2006). Sexual victimization is not only a subject that is important for those interested in the criminal justice system, it is also a topic of importance to public health experts, policymakers, legislators, social scientists, and social activists (Tjaden and Thoennes 2006).

Do the male and female experiences of sexual assault result in different mental health or substance abuse outcomes? In other words, when men and women experience sexual assault, do they differ in the consequences they experience? To answer this question, I will examine four specific questions. (1) Do victims of both completed and attempted sexual assault experience more severe depression and alcohol abuse than nonvictims? (2) Does gender moderate the relationship between the type of assault (attempted or completed) and the consequences of sexual assault? (3) Do characteristics of the assault that lead to increased trauma, specifically weapon use, violence, threat of harm, or belief of harm, affect the severity of particular consequences, specifically depression and alcohol abuse? And (4) does gender moderate the relationship between these sexual assault characteristics and the consequences of the sexual assault?

Depression and alcohol abuse will be the dependent variables in this project. The type of assault, attempted or completed, will be one primary independent variable.

Characteristics of the assault such as weapon use, violence, threat of harm, and belief of harm at the time of the sexual assault is a second independent variable. This work will include not only female victims, but also male victims, making gender a moderating factor.

Sexual assault is a very broad term that covers many different types of assault. According to The United States Department of Justice, sexual assault is “any type of sexual contact or behavior that occurs without the explicit consent of the recipient. Falling under the definition of sexual assault are sexual activities such as forced sexual intercourse, forcible sodomy, child molestation, incest, fondling, and attempted rape” (2014). By this definition, men and women can both be victims of sexual assault; however, of those reported, women are the victims in 94% of completed rapes, 91% of attempted rapes, and 89% of all sexual assaults. Sexual assaults are also differentiated by the characteristics of the event. For example, a sexual assault during which a weapon or violence was used may be very different (and therefore have very different consequences) than one not involving these aspects. For the purposes of this thesis, I will use the term “sexual assault” to refer to all forms of sexual assault, including rape.

The majority of the perpetrators committing sexual assaults are men (Kalmakis 2010). It is difficult to find enough male victims to assess many of the factors that should be studied. As such, gender has rarely been examined as a moderator (Kaysen et al. 2006). The lack of male data limits the past literature to mostly female victims, and therefore we know more about the female experience of sexual victimization than we do

about the male experience. This is a limitation that needs to be addressed in order to fully understand the wide spectrum of sexual assault.

Not only is there a clear need for research in the area of sexual assault, gender theory suggests that power and status differences between men and women may impact the way they react to sexual assault. According to R.W. Connel, there is a “global subordination of women to men” (1987). This theory emphasizes the role of women as “emphasized femininity,” meaning they are intended to accommodate the interests and desires of men while “hegemonic masculinity” is the male dominant heterosexual power that is achieved through cultural processes. I argue that because of these gender roles, men and women may respond quite differently to sexual assault. When a woman is sexually assaulted, it amplifies the subservient gender role associated with emphasized femininity. When a man is sexually assaulted, he experiences subservience and victimization that conflicts dramatically with the norms of hegemonic masculinity. This loss of dominant heterosexual power in the wake of sexual assault may influence a man’s cognitive appraisal of the event differently than a similar assault might influence a woman’s. Specifically, male victims of sexual assault must cope not only with the aftermath of a violent assault, but also with what could be viewed as an extreme failure to adhere to norms of masculinity and expectations of manhood. This suggests there may be gender differences in responses of sexual assault victims.

Because of the lack of information about male experiences and the deficit of knowledge about the psychological health consequences of sexual assault for men, there is a definite need for further study in this arena. Research that has been done concerning

male sexual assault often uses small sample groups, such as rape crisis centers, that may produce distorted data and may not be representative of male victims (Light and Monk-Turner 2009). In the report of the basic findings from the National Violence Against Women Survey, a nationally representative survey conducted by the Center for Policy Research, there is a suggestion that it is essential to research the long-term psychological consequences of sexual assault, including depression and PTSD for both men and women (Tjaden and Thoennes 2006).

Although sexual assault is often something that cannot be prevented, by knowing what characteristics of sexual assault may lead to certain consequences, programs and support groups may be able to help victims avoid depression and alcohol abuse later in life. Just as gender may be associated with differences in responses to sexual assault, the characteristics of the assault may also contribute to different responses in mental health and substance abuse. For example, research shows that weapon use during sexual assault is significantly related to depression, whereas other characteristics such as location of the sexual assault are not (Winfield et al. 1990). More information on highly understudied gender effects on the relationship between characteristics of and responses to sexual assault could be valuable to understanding the male experience and may also help those who have few paths for support.

CHAPTER TWO

LITERATURE REVIEW

Sexual assault is a forced sexual act that is not consensual (Kalmakis 2010). It is a terrible event that occurs all too often. Sexual assault can be seen as a problem with societal, political, and cultural dimensions. Many say that there are cultural, psychological, situational, and societal variables that cause sexual assault (Kilpatrick, Resick, and Veronen 1981). Millions of men and women have been sexually assaulted at some point in their lifetimes, and these numbers may be underestimated. Reports of sexual assault involving male victims are likely even more severely underestimated (Pino and Meier 1999). It has been suggested that the number of actual sexual assault victims is between two and three and a half times the number reported (Kilpatrick, Resick, and Veronen 1981).

Of the women who have been victims of sexual assault, very few seek help or assistance (Koss and Burkhart 1989). For example, only 5% of college sexual assault victims sought help immediately following the assault. Less than half of the victims determined to need treatment for post-sexual assault issues agreed to the therapy. Of those victims who do accept treatment immediately following the assault, only one fourth follow through with a full 14-hour course. Even those who do accept therapy often do not have clear evidence that the treatment was effective. Many victims feel that if they don't acknowledge the victimization, then they will be able to forget about the event entirely. This makes them believe that therapy is the wrong path because of the necessity to recount the assault (Koss and Burkhart 1989).

When victims do not seek treatment, they try to cope with the trauma on their own, which may exacerbate unwanted consequences like substance abuse or depression. According to Koss and Burkhart (1989), most victims have long-term problems that do not go away years after the assault. These include difficulties in their dating, marital, and sex lives, suspicion and fear, and depression. Only a quarter of victims feel as though they don't have any significant symptoms a year after the assault (Koss and Burkhart 1989).

There are many different mental health consequences of sexual assault. These include depression, severe fear in social situations, sexual dysfunction, obsessive-compulsive disorder, and posttraumatic stress disorder (Kilpatrick et al. 1988; Tolin and Foa 2006). These types of mental health consequences can have a severe impact on a victim's daily life. In this thesis, I focus on the outcomes depression and alcohol abuse because they are common problems that many experience. Both depression and alcohol abuse can have underlying causes that are invisible to others, such as sexual assault. Not only are these problems common, but gender differences have also been well documented within these outcomes.

Little research has looked at the association between sexual assault and depression or alcohol use specifically among male victims. The degree of trauma associated with sexual assault suggests that men should also be at risk for elevated depressive symptoms and alcohol abuse. Studies using small clinical samples suggest that men may suffer greater physical trauma, were very reluctant to talk about the genital part of the assault, experienced symptoms of PTSD, and were more likely to deny and

control their emotions in response to the assault (Isely and Gehrenbeck-Shim 1997; Kaufman et al. 1980).

The lack of robust literature on male victims of sexual assault makes it difficult to form hypotheses on likely mental health correlates. Because of this, I rely largely on the concept of hegemonic masculinity to theorize the unique reactions that male victims might have to sexual assault and potential consequences for both depression and alcohol abuse. Although the literature shows clear differences between men and women concerning these two topics in general populations, the norms of hegemonic masculinity may complicate the links between sexual assault and mental health for men. I will address this topic throughout this literature review and in my hypotheses.

In addition to examining both male and female victims, I will also distinguish between completed and attempted assaults. There is very little literature that addresses the reactions of victims of attempted sexual assault compared to victims of completed sexual assault. Many studies combine the incidents of completed sexual assault and attempted sexual assault into a single sexual assault variable (Collins et al. 2014; Ishikawa, Kobori, and Shimizu 2013). Others only differentiate between completed and attempted sexual assaults when giving basic statistics about sexual violence (Valenca et al. 2015; George et al. 2014). Literature that addresses only attempted sexual assault victims is even more elusive. The literature that does exist that compares victims of completed and attempted sexual assault states that victims of attempted sexual assault and victims of completed sexual assault do not differ in their reactions to sexual assault

(Becker 1982). This literature suggests that both immediate and long-term responses will be the same for both attempted and completed sexual assault victims.

One would expect that both male and female victims of attempted sexual assault would have the same types of responses as victims of completed sexual assault.

Although literature shows that this is true for women, I would argue that the norm of hegemonic masculinity suggests there may be a difference for men. For a man, if the attack does not end in penetration, he likely feels as though he has lost some power and status as his gender norms dictate, but he may also be able to frame the event in a way that sustains conformity to gender norms grounded in notions of hegemonic masculinity. If penetration does occur, however, the violation of the expectations of hegemonic masculinity is much harder to deny as the victim has been forced to submit to the power of another individual. Thus, he has moved from a place of superiority and power to a place of weakness and subjugation. This subjugation produces an enormous discrepancy between gender norm expectations and the subjugation he has experienced. Such gaps are linked to significant emotional distress, especially anxiety and depression (Higgins 1987). For this reason, I would argue that men, but not women, may respond differently to attempted assaults than to completed assaults.

In the following sections, I briefly review literature on associations between sexual assault in general and both depression and alcohol use. I then draw from this literature, as well as the material discussed above, to offer specific hypotheses regarding male and female sexual assault victims. (I should note that this literature is focused

almost exclusively on women as sexual assault victims, but if there are male subjects included, it is specified in the text.)

Depression

According to the Mayo Clinic, depression is a mood disorder that may cause a person to persistently feel sad and lose interest in life. This condition can affect how a person lives, both emotionally and physically, and may hinder normal daily life (Mayo Clinic Staff 2014).

Depression is a well-documented response to stressful life events. For example, In a 1 year longitudinal study that examined twins and the development of depression as a reaction to stressful life events, researchers found a correlation between stressful life events, like sexual assault, and major depression (Kendler, Karkowski, and Prescott 1999). It has also been well documented in other longitudinal studies that after the sexual assault, victims have more depressive symptoms than non-victims, both short-term and long-term (Atkeson et al. 1982). This holds true for both self-report and interviewer measures. The most obvious post-sexual assault symptoms for a victim are fear and anxiety, but it is important to note that less obvious depressive symptoms have also been reported. Symptoms of depression documented among sexual assault victims include disturbances in sleeping and eating, guilt, shame, feeling worthless, irritability, fatigue, decreased libido, and suicidal thoughts. According to a cross-sectional study, victims also get less enjoyment out of daily life, experience more tension and fatigue, and have an increase in interpersonal problems and higher rates of depression (Ellis, Atkeson, and Calhoun 1981).

As found in a longitudinal study that followed victims for a year after their victimization, victims were significantly more depressed than non-victims immediately after the sexual assault (Kilpatrick, Resick, and Veronen 1981). Depressive symptoms can return to normal levels within the 4 months following the sexual assault, but some victims still exhibit these symptoms much later (Atkeson et al. 1982). In the longitudinal study by Kilpatrick, Resick, and Veronen (1981), one year after the sexual assault, victims still suffered from effects of the assault. Most of the improvement that did occur happened between 1 and 3 months after the sexual assault. Some evidence also points to the thought that victims actually get worse a year after the victimization, possibly due to avoidance behavior (Kilpatrick, Resick, and Veronen 1981). Another longitudinal study by Atkeson et al. (1982) that followed victims for a year after the sexual assault found that specific trauma during sexual assault does not predict development of depressive symptoms, but problems associated with the assault and family and friends' reactions do. Also, those who already exhibit depressive symptoms are more likely to compound these original feelings with the new ones, making recovery more difficult (Atkeson et al. 1982). All of this supports the idea that depression is a likely consequence in the aftermath of sexual assault.

Women, unlike men, experience sexual assault within the framework of emphasized femininity where sexual assault functions as an extreme and violent manifestation of the general subordination of women to men. Thus, while no less traumatic, women who are sexually assaulted may not experience the same discrepancy with respect to gender norms that men do. Further, research shows women draw from a

repertoire of coping strategies that are consistent with the doctrine of emphasized femininity such as rumination and suppressed anger (Rosenfield 1980; Simon and Lively 2010; Rosenfield, Lennon, and White 2005; Piccinelli and Wilkinson 2000). Both rumination and suppressed anger are associated with depression, which may, in turn, lead women to respond to highly traumatic assaults with more depression than do men (Chaplin 2006; Rosenfield, Vertefuille, and Mcalpine 2000).

Though the empirical literature gives little guidance regarding the mental health consequences of sexual assault for men, the theories of hegemonic masculinity and emphasized femininity shows that there are differences in status between men and women. What does that suggest about how sexual assault may be associated with depression? I would argue that the norms of hegemonic masculinity and emphasized femininity suggest different expectations for completed versus attempted sexual assault. With respect to completed assaults, the literature strongly suggests the depression is a likely outcome, and although women are more likely to develop depressive symptoms than men, men will likely express some of these symptoms too, particularly given the distress men may feel at failing to uphold norms of hegemonic masculinity.

Notions of hegemonic masculinity, however, do suggest a gender difference in responses to attempted assaults. Men benefit from the ascendancy that exists within religion, the media, and wages (Connel 1987). They have a norm of heterosexual dominance that is displayed by fictional icons like John Wayne, or real people like Muhammed Ali. Thus hegemonic masculinity dictates that men hold power over women, and even other men. When a man is sexually assaulted, particularly if

penetration occurs, the gender norms associated with hegemonic masculinity, like heterosexuality and dominance, are violated.

An attempted assault, especially one that does not result in penetration, may not attack a man's sense of masculinity and power to the extent that a completed assault could. He could more easily rationalize reasons why the attack did not continue that make him feel as though he sufficiently resisted. Thus, men may not experience depression, or may experience less depression, in association with attempted sexual assault.

In summary, based on the literature on mental health outcomes of sexual assault as well as arguments derived from the norms of hegemonic masculinity and emphasized femininity, I anticipate that women who have experienced either completed or attempted sexual assault will display elevated levels of depression. In contrast, I expect that among men, completed sexual assault will be more strongly associated with elevated depression than attempted sexual assault.

Alcohol Abuse

Alcohol abuse is defined as when one's health, relationships, or ability to work are harmed by drinking. For our purposes, heavy drinking will constitute the level of alcohol necessary to be categorized as abusing alcohol. The CDC defines "heavy drinking" as fifteen or more drinks per week for a man and eight or more drinks per week for a woman (CDC 2014a). Alcohol use may be a way to regulate or avoid negative affect or emotions that follow a traumatic event. According to a longitudinal study that followed randomly selected college students over three years, sexual assault is associated with increases in

psychological distress, which then contributes to an increase in alcohol use (Kaysen et al. 2006).

According to this same study, alcohol use has been documented as both a risk factor for sexual assault and a possible negative consequence of experiencing sexual assault (Kaysen et al. 2006). National, community, and clinical samples all show that there is a strong relationship between victimization, violence, posttraumatic stress disorder, and substance abuse (Kalmakis 2010).

Heavy drinking is a recognized response to sexual assault. It may be a means of coping with psychological distress that is related to the sexual assault (Kaysen et al. 2006). For example, in a longitudinal study that followed over 3,000 women for two years, it was found that women may use substances as a way to cope with the assault and the mental effects of the assault (including, but not limited to, PTSD). This avoidance of negative emotion has been termed chemical avoidance (Kilpatrick et al. 1997). Evidence supports this model, showing that alcohol use reduces negative emotions. Evidence also shows that men and women who are sexually assaulted in their lifetimes were much more likely to become alcoholics or drug abusers than those who had not experienced sexual assault (Kilpatrick et al. 1997).

According to the longitudinal study by Kaysen et al. (2006) mentioned earlier, college students who have been sexually assaulted have higher alcohol consumption and have more negative consequences related to drinking. This relationship is the same for male and female victims (Kaysen et al. 2006). Another study by Kalmakis (2010) found that women with no history of alcohol abuse began abusing substances after a first-time

sexual assault. Those who had histories of alcohol abuse were twice as likely to be assaulted. If a woman used substances before the assault, she is likely to use after the assault. Women who had experienced sexual assault were more likely to have substance and alcohol abuse problems than women who had not been assaulted (Kalmakis 2010).

More than half of the people entering substance addiction rehabilitation programs report that they have been physically or sexually abused (Kalmakis 2010). The majority of these people were women and chose to abuse alcohol over other available substances, suggesting an attempt to cope with the painful emotions associated with the assault. Misuse of alcohol makes the victim more vulnerable to another attack, and therefore creates a vicious cycle (Kalmakis 2010). Kilpatrick et al. (1997) also found support that sexual assault leads to alcohol abuse.

Taken as a whole, there is strong support for the hypothesis that women who have experienced sexual assault will show elevated alcohol consumption. With respect to men, I again turn to the notion of hegemonic masculinity to guide my expectations. The discrepancy between the power men are ascribed within hegemonic masculinity and the experience of becoming a victim of sexual assault, particularly when the assault involves higher levels of trauma (weapons, threats of violence, etc.), may produce an especially severe disruption, perhaps one even more severe than that experienced by female victims. This creates an interruption that may be extremely challenging to deal with, but rather than ruminating on the trauma, men are likely to avoid thinking about it in order to reduce the feelings of discrepancy resulting from violations of the norms of hegemonic masculinity (Piccinelli and Wilkinson 2000). One of the most common strategies men

use to avoid the emotional consequences of trauma is substance abuse. Thus alcohol abuse may be a more common response to traumatic victimization for men than it is for women and may be especially likely among men suffering highly traumatic forms of sexual assault (Becker and Hu 2008; Grant et al. 2004; Brady and Randall 1999; Lex 1991).

Like depression, hegemonic masculinity and emphasized femininity will likely affect alcohol abuse responses in male and female victims of attempted and completed sexual assault. Females will likely have the same responses toward sexual assault, regardless of whether the assault was attempted or completed. Men, however, may have more severe responses if penetration occurs because the gender norms of hegemonic masculinity have been violated and the discrepancy between these gender norms and subordination associated with the sexual assault is much greater than that for a woman. Hegemonic masculinity suggests, therefore, that completed assaults, could lead to more alcohol use in men than attempted assaults.

The extant literature suggests that like depressive symptoms, alcohol abuse is a likely consequence of experiencing sexual assault and should impact both male and female victims. In this thesis, my particular focus is first, on the relationship between sexual assault and developing depression or alcohol abuse as a victim and second, on the degree to which the level of violent victimization, or trauma, associated with the assault should be linked to developing depression or alcohol abuse. I examine the effect gender may have as a moderating factor in both of these questions. In the next section I consider

characteristics of sexual assaults and discuss the association between assault characteristics and mental health outcomes.

Characteristics of the Sexual Assault

Research generally looks at the period immediately following the sexual assault up to a year after the event. Short-term reactionary symptoms can turn into chronic and long-term problems. The characteristics of the crime may modify the intensity of this response (Koss and Burkhart 1989); assaults characterized by greater violence, for example, may be linked to more serious mental health symptoms. Unfortunately, there has been little research conducted on victim's reaction to sexual assault based on the degree of trauma that accompanies the sexual assault (Atkeson et al. 1982).

Sexual assault is always a traumatic event and trauma is associated with risk for mental health problems. Characteristics of the assault such as violence or fear of violence can also amplify the trauma, which may, in turn, exacerbate mental health symptoms. Judith Lewis Herman defines trauma as “a feeling of intense fear, helplessness, loss of control, and threat of annihilation” (Herman 1992 p. 33). Such feelings would likely be amplified during assaults that feature violence, use of a weapon, or the threat or belief that oneself or others are at risk. Literature on the link between assault characteristics and mental health consequences has primarily looked at PTSD but supports the argument for an association with mental health. For example, Follette et al. (1996) documented in a cross-sectional study that more violent and severe battering during a physical assault is associated with a victim developing PTSD. Multiple types of traumatic experiences, in this case, child sexual abuse, adult sexual assault, and physical

abuse by a partner in adulthood, lead to higher levels of post-trauma symptoms like anxiety, dissociation, and depression. Studies have also found that the level of exposure an individual has to traumatic experiences affects PTSD symptoms related to combat and post-victimization symptoms of sexual assault (Follette et al. 1996).

According to another cross-sectional study by Resnick et al. (1993), there is an association between a person being injured or believing his or her life is in danger and developing negative mental health consequences from an assault. These are considered trauma-related variables. Other trauma-related variables include fear of death or serious injury. Life threat and injury are trauma-related variables that predict higher instances of mental health consequences, particularly symptoms of PTSD (Resnick et al. 1993).

Because these characteristics of the assault imply the level of trauma, I argue that having more of these types of characteristics involved in the assault would make the event more traumatic. If the event becomes more traumatic for the victim, the consequences that individual experiences will likely be more severe.

A majority of the literature that has been written concerning trauma focuses on PTSD and its related outcomes. However, according to reviews of the literature and cross-sectional studies, people who have PTSD as a result of trauma are also at an elevated risk for depression and alcohol abuse (Stewart 1996; Kilpatrick et al. 2003). This knowledge allows me to use this literature in order to draw conclusions about my own arguments. In this thesis, I analyze depression and alcohol abuse as two mental health consequences that may be sensitive to the characteristics of the assault. I expect

that both men and women who have experienced a higher level of trauma will also experience higher levels of both alcohol and depression.

CHAPTER THREE

HYPOTHESES

Hypothesis 1: Victims of completed and attempted sexual assault will experience more depressive symptoms and alcohol abuse responses than nonvictims.

This relationship has been well documented in many studies, as discussed earlier. Longitudinal studies also have observed this relationship and have shown a causal link between sexual assault and both subsequent depression and alcohol abuse (Clark et al. 2003). This means that sexual assault can lead to a victim becoming more depressed or abusing alcohol more than a non-victim. This hypothesis is comparing levels of depression and alcohol abuse between victims and nonvictims.

Again, mentioning the limited literature on this topic, victims of both attempted and completed sexual assault have been found to have very similar responses, both long term and short term, to sexual assault (Becker 1982). Because of this, it is reasonable to expect that the differences will be between victims (attempted and completed) and nonvictims. Both types of victims can be presumed to have more severe responses than nonvictims because of the trauma they experienced during the attack.

Hypothesis 2: Gender will moderate the relationship between sexual assault and depressive symptoms and alcohol abuse responses. That is, the relationship between sexual assault and depression will be stronger for women, whereas the relationship between sexual assault and alcohol abuse will be stronger for men. Men will show stronger responses to completed than to attempted sexual assault than women.

Victims are predicted to have more problems with both depression and alcohol abuse than nonvictims, but as stated earlier, women are more likely to experience problems with depression than men while men are more likely to experience problems with alcohol abuse than women. This hypothesis will focus on comparing women's and men's reactions to sexual assault.

This hypothesis will also attempt to assess the expectation that gender has an effect on whether a completed or an attempted assault has the same consequences for the victim. This means that as mentioned earlier, female victims of attempted and completed sexual assault may have the same types of reactions, while male victims of attempted and completed sexual assault may differ in their reactions because of their hegemonic masculinity and the loss of power that a completed sexual assault can cause.

Hypothesis 3: During a sexual assault, victims whose assaults had a higher level of trauma (those who were threatened with harm, believed they would be harmed, and/or were assaulted by a perpetrator using violence or a weapon) will report more depressive symptoms or alcohol abuse responses than victims whose assaults exhibited fewer of these characteristics.

Victims who experience sudden, violent sexual assault are more likely than those who were less violently assaulted to develop depression, phobias, fear, and avoidance behaviors (Ellis, Atkeson, and Calhoun 1981). Because of this finding, threat of harm, belief of harm, violence, and weapon use will likely have the same type of effect. All of these characteristics of the assault lead to a more traumatic experience, which leads to greater negative emotions like fear and depression.

Individuals gauge stressors by interpreting the situation (Koss and Burkhart 1989). Because of this, when sexual assault occurs, the victim's experience and response to the environment create a cognitive-emotional paralysis that leads the victim to deny the experience as a way to explain the event (Koss and Burkhart 1989). Because the event is so traumatic, this type of denial may also lead to substance abuse as a way to cope or deny the experience. This hypothesis is comparing victims with different characteristics of the assault and their depression or alcohol abuse responses.

Hypothesis 4: The gender of the victim will moderate the relationship between the characteristics of the assault and depressive symptoms or alcohol abuse. That is, the relationship between the characteristics of the assault and depressive symptoms will be stronger for women, whereas the relationship between the characteristics of the assault and alcohol abuse will be stronger for men.

Millions of women have been sexually assaulted at some point in their lives. Women experience a proportionately higher number of traumatic events, events that involve perceived life endangerment or injury, than men (Kilpatrick et al. 1997). This may alter the perception of male and female victims. Society treats men and women differently, and as such, gender norms and beliefs may lead to different reactions to male and female victims. When there are so many more female victims than male victims, it may be difficult to view them in the same way, largely because there is a deficit of data concerning male victims. The perception of male and female victims may also differ because the difference in frequency between male and female victims make the female victim almost "common" while the male victim seems "rare." Because the surrounding

environment views male and female victims in different ways, it would also be easy for the victims to view themselves differently. This can lead to different ways of coping, such as alcohol use, or different ways to handle emotions, such as depression.

Women and men react differently to problems in their lives, and notions of hegemonic masculinity and ascribed power suggest that men are at an even greater risk than women for developing substance abuse problems while women are at an even greater risk than men for developing depression in the wake of sexual assault. Both depression and alcohol abuse differ by gender, so by examining gender as a moderator, we can see how the relationship between the characteristics of the assault and depression or substance abuse changes when we consider gender. This hypothesis is comparing victims with different characteristics of the assault and their depression or alcohol abuse responses while examining gender as a moderator.

CHAPTER FOUR

DATA

I will be using the National Violence Against Women Survey (NVAWS), a nationally representative computer assisted telephone interview survey including a completed sample of 8,000 women and 8,000 men aged 18 and older from all 50 United States and the District of Columbia. The sample was stratified by U.S. Census region. The NVAWS was administered in 1995 and 1996 and used a random digit dialing of households, which then selected the eligible adult with the most recent birthday as the respondent for the household. The study was jointly sponsored by the National Institute of Justice and the Centers for Disease Control and Prevention (Tjaden and Thoennes 2006).

Although the NVAWS is a bit older than might be preferable, the CDC still uses the data, and it is still widely used and cited by researchers today (CDC 2014b; Jasinski, Blumenstein, and Morgan 2014; Johnson, Leone, and Xu 2014). The NVAWS provides a nationally representative picture of the prevalence of sexual assault at the time the data were collected, and it is a comprehensive study that has not yet been replicated at the national level (Potter and Laflamme 2011). The NVAWS is the only nationally representative survey that includes variables measuring both sexual assault and consequences like depression and alcohol use while also including factors like characteristics of the assault. I would argue that these benefits outweigh concerns with the age of the data.

After an extensive pre-test, the National Violence Against Women Survey was

administered in a series of data collection administrations that took place between November 1995 and May 1996. The survey used random samples of 500, 1,000, and 2,000 completed interviews to compose the full sample. In the first two administrations, questions used to screen for sexual assault were tested in order to determine their validity. These two administrations involved female respondents only. Importantly, these first two administrations were not pretests; they were legitimate initial administrations of the survey (Tjaden and Thoennes 2000). There were 6 more administrations after these initial two, all of which used a third version of the screening questions. Three of these were female/male surveys, one was female only, one was the Spanish female/male survey, and the last was the callback female/ male survey. For a more detailed description of the various administrations, please refer to Appendix A.

I have chosen to use all of the English-speaking survey administrations. Because determining the specific type of sexual assault (other than attempted or completed) is not a concern for this analysis, and the types of assaults that are covered in the various administrations do not differ, I thought it best to maintain a higher number of respondents rather than removing the respondents from the first two administrations from the dataset. By keeping data from the first two administrations of the questionnaire, I have preserved higher numbers of female sexual assault victims, allowing for a more robust analysis. The first two administrations include 211 female victims of sexual assault that would be lost if I chose to exclude these administrations from the analysis.

Because meaning can be lost in translation, I have decided to exclude respondents who answered the Spanish-language survey from my analysis, limiting this project to

English-speaking adults. The Spanish-language survey lasted longer than the English-language survey and was administered by bilingual interviewers (Tjaden and Thoennes 2000). Also, the prevalence of sexual assault was significantly different for the Spanish-language survey than the English-language surveys, suggesting that there are underlying differences. For the purposes of this project, all seven of the English-speaking waves (A, B, C, D, E, F, and Callback) are used in the analysis.

There are 2 analytic samples used in this project. The first sample, the full sample, includes all of the respondents, both male and female, who responded to any of the administrations of the survey except the Spanish-language administration and who were not missing on any of the variables in the analysis. 315 respondents were lost because they were a part of the Spanish-language survey administration. The remaining 2,261 missing respondents were not included in the analysis because they were missing on one or more of the variables in the analysis.

I used Chi-square tests in order to test for significant differences between the missing and not missing respondents. Missing and not missing respondents do not significantly differ in education level, reporting of completed, attempted, or no assault, or their characteristics index score. Missing and not missing respondents significantly differ in employment status, marital status, gender, race, income level, sexual assault, and age. Missing respondents are more likely to be not employed, not married, female, other race, of lower or missing income levels, and to be victims of sexual assault. Missing respondents are also significantly older than not missing respondents. The average age of

missing respondents is 44.43 years whereas not missing respondents have an average age of 43.31 years.

The final sample, consisting of 13,424 respondents (6,246 women and 7,178 men), is used to test hypotheses 1 and 2. The second sample, the victim only sample, includes all English-Speaking victims of sexual assault. This sample includes both males and females who reported that they were victims of at least one type of completed sexual assault or attempted sexual assault. This includes attempted and completed vaginal, anal, and oral penetration by penis, fingers, tongue, mouth, or object. This sample, consisting of 1,222 respondents (1,040 women and 182 men) for depression and 1,227 respondents (1,046 women and 181 men) for alcohol abuse, is used to test hypotheses 3 and 4.

Of the 237 men who were initially identified as victims of sexual assault to be used in the analysis of hypotheses 3 and 4, 25 cases were lost because they were missing on at least one of the following variables: the depression scale, alcohol, complete or attempted sexual assault, nonvictim, black, white, or other race, age, gender, married or not married, less than high school, high school graduate, or some college or higher, employed or not employed, or low, middle, upper, or missing income. This leaves 212 men, of whom, the remaining 30 missing men (or 31, respectively) were lost because of their refusal to answer (or a lack of an answer for) at least one of the detailed questions about the assault that were included in the characteristics of the assault index. The characteristics index is only seen as valid when there is a valid answer for all four of the characteristics questions, otherwise it is coded as missing. 22 male respondents have missing answers for all four of the characteristics.

The analysis focuses on both comparing victims to nonvictims and also on comparing different types of victims. After comparing victims to non-victims and examining the possible gender effects on the relationship between completed, attempted, or no assault and developing depression or alcohol abuse, this analysis compares victims by the characteristics of their assaults, examines negative mental health consequences that may be attributed to these characteristics, and then determines if gender affects this relationship. Hypotheses 1 and 2 use the full English-speaking sample from the NVAWS. This includes victims of completed and attempted sexual assault and nonvictims. Hypotheses 3 and 4 use only the respondents of the NVAWS who reported that they have been sexually assaulted. This includes both completed and attempted assault victims.

CHAPTER FIVE

MEASURES OF SEXUAL ASSAULT

In this section, I will explain how I determined who has been sexually assaulted, and therefore who is included in the analysis. Over the course of the eight administrations of NVAWS, three methods of screening for sexual assault were used. Administrations 1 and 2 each employed a different version of the screening questions. Administrations 3 through 8 used a combination of screening questions drawn from the first two administrations. NVAWS employed three methods for screening for sexual assault. The three methods are explained below.

Version A was used during the first administration of the NVAWS and asked of 500

respondents, all female. It is comprised of 2 questions:

- 1) “Has a man or boy ever made or tried to make you have sex by using force or threatening to harm you or someone close to you? Just so there is no mistake, by sex we mean putting a penis in your vagina, anus, or mouth?”
- 2) “Has anyone, male or female, ever put or tried to put their fingers, tongue or objects in your vagina or anus against your will by using force or threats?”

Version B was used during the second administration of the NVAWS and asked of 501

respondents, all female. It is comprised of 4 questions:

- 1) “Has a man or boy every made or tried to make you have sex by using force or threatening to harm you or someone close to you? Just so there is not mistake, by sex we mean putting a penis in your vagina?”
- 2) “Has anyone, male or female, ever made or tried to make you have oral sex by

using force or threat of harm. Just so there is no mistake, by oral sex we mean that a man or boy put his penis in your mouth, or someone, male or female, penetrated your vagina or anus with their mouth or tongue?”

3) “Has anyone ever made or tried to make you have anal sex by using force or threat of harm? Just so there is no mistake, by anal sex we mean that a man or boy put his penis in your anus?”

4) “Has anyone, male or female, ever put fingers or objects in your vagina or anus against your will by using force or threats?”

After these initial administrations, NVAWS researchers created a third set of sexual assault questions, Version C, that was used throughout the remainder of the administrations. A total of 14,999 respondents, 8,000 male and 6,999 female, were screened using these questions. It is comprised of the four questions from Version B, along with one additional question about attempted sexual assault:

5) “Has anyone, male or female, ever attempted to make you have vaginal, oral or anal sex against your will, but intercourse or penetration did not occur?”

The full text of the final screening questions asked of men and women can be found in Appendix B.

Table 1 displays the percentages of respondents who said yes to each question (F1-F5) in each of the 8 waves. The bold percentages represent the total percentage of respondents in each wave who said yes to at least one of the questions. “% Female” indicates the percentage of females in each wave that are sexual assault victims, illustrating that the difference in the total percentages can be accounted for by the

addition of male respondents. “% Male” indicates the percentage of males in each wave that are sexual assault victims.

Table 1: Frequency of Sexual Assault Screening Questionnaire Answers in Each Wave

| Question | Wave | | | | | | |
|---------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|---------------------------------------|
| | A: Female Only | B: Female Only | C: Female/ Male | D: Female/ Male | E: Female/ Male | F: Female Only | Callback: Female/ Male |
| F1 | 18.5% (92) | 19.2% (96) | 11.3% (113) | 13.1% (240) | 12.9% (228) | 11.7% (192) | 11.8% (61) |
| F2 | 14.2% (71) | 5.6% (28) | 2.6% (54) | 2.7% (134) | 2.6% (132) | 4.0% (67) | 3.2% (30) |
| F3 | N/A | 1.8% (9) | 1.1% (22) | 1.2% (60) | 1.5% (75) | 2.3% (38) | 2.6% (24) |
| F4 | N/A | 6.8% (34) | 2.9% (60) | 2.7% (135) | 2.5% (128) | 4.8% (80) | 3.1% (29) |
| F5 | N/A | N/A | 5.4% (111) | 4.4% (215) | 4.2% (211) | 8.7% (145) | 5.4% (51) |
| Total% | 32.7% (163) | 33.4% (167) | 23.3% (360) | 24.1% (784) | 23.7% (774) | 31.5% (522) | 26.1% (195) |
| % Female | 32.7% (163) | 33.4% (167) | 30.9% (312) | 35.1% (648) | 35.3% (628) | 31.5% (522) | 32.8% (171) |
| % Male | N/A | N/A | 4.6% (48) | 4.5% (136) | 4.5% (146) | N/A | 5.8% (24) |

Note: “Callback” refers to the callback administration where interviewers called the respondent back at a more convenient time. See Appendix B for further explanation.

If I use these questions to code whether or not the respondent has been sexually assaulted, the versions should not affect my data. Version A asks broader questions, but still covers the main aspects of sexual assault (vaginal, anal, and oral penile penetration and attempted penetration, and vaginal and anal penetration and attempted penetration by fingers, tongue, or object), while versions B and C add specificity by separating the different types of sexual assault into different questions. If a respondent answers yes to

any of the questions on any of the versions of the questionnaire, he or she was coded as “yes” to sexual assault.

Of the women who answered the sexual assault screening questions in version A, 32.7% reported some type of sexual assault. In version B, 33.4% reported some type of sexual assault. Finally for the other English-speaking waves using version C, an average of 25.74% of respondents reported some type of sexual assault. The difference in percentage is due to the difference in the gender makeup of the respondents in each wave. Because women are more likely to become victims of sexual assault, the percentage of respondents who have experienced sexual assault is expected to be larger for the all female waves. When analyzing only female respondents in the version C English-speaking waves, the average percentage of women who reported some type of sexual assault is 33.1%, which is consistent with the all female percentages.

As stated earlier, those included in the final analysis are victims of sexual assault who answered “yes” to any of the sexual assault screening questions included in the English-speaking questionnaires. These respondents are both male and female, and a statistical breakdown can be seen in Table 2. Table 2 shows that there are 237 male victims of sexual assault and 1434 female victims. This means that of the English-speaking sample (7868 men and 7817 women), 3.01% of the men and 18.34% of the women are victims of some type of attempted or completed sexual assault. This accounts for 10.7% of the total sample.

| Table 2: Frequency of Sexual Assault | | |
|---|-----------------------|-------------------|
| Gender | Sexual Assault | |
| | Number | Percentage |
| Male N=7868 | 237 | 3.01% |
| Female N=7817 | 1434 | 18.34% |

Sexual Assault is the number and percentage of people who have been sexually assaulted out of the total number of English speaking men and women.

CHAPTER SIX

CREATING VARIABLES FOR ANALYSIS

In this section, I will explain how all of the variables used in the analysis are created. Original variables are taken from the NVAWS and made into variables that can work within the analysis.

Sexual Assault

The SexualAssault variable is coded in a way that allows a respondent who said “Yes” to at least one of the sexual assault screening questions (F1, F2, F3, F4, or F5) to be coded as a “Yes” in the SexualAssault variable. “Yes” is a 1 in this variable while a respondent answering no to all of the questions is coded as 0. I chose to code them as 0 because there is a lack of sexual assault in these respondents.

The Completed variable is coded so that those respondents who are victims of at least one type of completed assault have a score of 1 on this variable while all others have a score of 0. Victims of a completed assault answered “Yes” to at least one of the completed assault questions (F1, F2, F3, or F4). These victims can also answer “Yes” to the attempted assault question (F5), as long as those respondents have also answered “Yes” to a completed assault question.

The Attempt variable is coded so that those respondents who are victims of an attempted assault only, not those who are victims of both attempted and completed assaults, are given a 1 on this variable where all others are assigned a score of 0. Victims of an attempted assault answered “Yes” to the attempted assault question only. These

respondents answered “No” to the completed assault questions (F1, F2, F3, and F4) and “Yes” to the attempted assault question (F5).

Nonvictim, a variable coded so that those who have not experienced a completed or attempted assault, excluding missing cases, are assigned a score of 1 and all others are given a score of 0, is used as the reference category in the regressions for hypotheses 1 and 2. Because hypotheses 3 and 4 only use victims, Attempt will be included in the model as a control using Completed as a reference category.

Assault Characteristics

The characteristics of the assault (Violence, Weapon, Belief, and Threat) are the second independent variable. This variable is an index including violence, weapon use, threat of harm, and belief of harm, there are multiple variables that are included in creating the independent variable. This section describes how all of the variables that are used in creating the independent variable are coded, and then combined, to create the characteristics index (CharInd).

The NVAWS data are structured to allow for multiple perpetrators, and multiple instances of assault with the same perpetrator. However, of all of the respondents who reported a sexual assault, 10% (177 total; 18 men and 159 women) reported multiple perpetrators. In these cases, this analysis includes information about the first perpetrator and includes the most recent sexual assault by that perpetrator. All of the original characteristics of the assault variables including a “t1” in the name of the variable are characteristics of the most recent sexual assault between that victim and his/her first

perpetrator (“Type 1”). For all recoded variables, “Don’t know,” “Refused,” and “Missing” answers were all coded as “missing.”

The NVAWS uses several questions to assess the characteristics of the assault:

Question J20 asks “Did he/she [the perpetrator] use a gun, knife or other weapon during this incident?” The Weapon variable is coded so that a respondent who said the assault included the use of a gun, a knife, or another weapon is coded as a “Yes” in the Weapon variable. Those who answered that no gun, knife, or weapon was used were coded as a “No” in the Weapon variable.

The j19t1 variables refer to violence used during the sexual assault. The question asked is “Did this incident involve his/her... MARK ALL THAT APPLY.” The answer choices are “Slapping or hitting you?,” “Kicking or biting you?,” “Choking or attempting to drown you?” “Hitting you with an object?,” and “Beating you up?”. There are also “None of the above,” “Don’t know,” and “Refused” response categories. In this variable, there are 5 different violence options (Slapping/hitting R, Kicking/biting R, Choking/attempting to drown R, Hitting R with object, and Beating R up), none of the above, and missing response categories. The respondent is told to choose all that apply. J19t1a is the first of these options that the respondent chooses. J19t1b is the second, and so on with a new variable (up to j19t1e), until the respondent has chosen all of the applicable answers. If the respondent chooses one answer and does not choose a second answer, j19t1b through j19t1e will be coded as missing.

The Violence variable is coded so that a respondent who indicated some type of violence in the j19t1a question is coded as a “Yes” in the Recj19t1a variable and

therefore a “Yes” in the Violence variable. The coding for this variable is this way because a person who indicates any type of violence will do so in question j19t1a, which will then be reflected in the recoded Recj19t1a.

Question J21 asks “Did he/she [the perpetrator] threaten to harm or kill you or someone close to you during this incident?” The answer categories are “Yes” and “No.” The Threat variable is coded to make “Don’t know” and “Refused” answers missing. The other data remain the same. This is the variable that is included in the index that covers threat of harm during the assault.

Question J22 asks “Did you believe you or someone close to you would be seriously harmed or killed during this incident?” The answer categories are “Yes” and “No.” The Belief variable is coded to make “Don’t know” and “Refused” answers missing. The other data remains the same. This is the variable that is included in the index that covers belief of harm during the assault.

Dummy variables are created for Violence (DumViolence), Weapon (DumWeapon), Threat (DumThreat), and Belief (DumBelief). These variables will be used both to create the index and in the analysis.

The Characteristics Index (CharInd) is coded to count the “Yes” responses in DumViolence, DumWeapon, DumThreat, and DumBelief in order to see how many of these characteristics each respondent identified as part of the sexual assault. A “0” on this index would indicate that the respondent identified that none of these characteristics were a part of the assault. A “1” on this index would indicate that the respondent identified that one of these characteristics was a part of the assault, and so on. Four is the

highest value a respondent can receive on this index, implying the highest level of trauma.

The characteristic variables that are examined are weapon use, violence, threat of harm, and belief in harm. The distribution of each characteristic is shown in Table 3. Weapon use indicates that a weapon (gun, knife, or both) was used during the sexual assault. 10 (4.2%) male respondents and 112 (7.8%) female respondents reported a weapon being used. Violence indicates that at least one of the specified forms of violence (slapping or hitting, kicking or biting, choking or attempting to drown, hitting with an object, and beating up) was used during the sexual assault. 50 (21.1%) male respondents and 413 (28.8%) female respondents indicated that violence was used. Threat of harm indicates that the perpetrator threatened to harm or kill the respondent or someone close to the respondent at the time of the assault. 48 (20.0%) male respondents and 427 (29.8%) female respondents indicated a threat of harm. Belief of harm indicates that the respondent believed he, she, or someone close to the respondent would be seriously harmed or killed during the sexual assault. 59 (24.9%) male respondents and 555 (38.7%) female respondents indicated a belief of harm.

Table 3: Frequency of Characteristics of the Assault

| Gender | Characteristics | | | | | | | |
|--------|-----------------|------|----------|-------|----------------|-------|----------------|-------|
| | Weapon Use | | Violence | | Threat of Harm | | Belief of Harm | |
| | Number | % | Number | % | Number | % | Number | % |
| Male | 10 | 4.2% | 50 | 21.1% | 48 | 20.0% | 59 | 24.9% |
| Female | 112 | 7.8% | 413 | 28.8% | 427 | 29.8% | 555 | 38.7% |

Note: The variables in the table refer to the number and percentage of those men and women who have been sexually assaulted that experienced each characteristic.

Table 4 shows the breakdown of the number of men and women in each category of the characteristics index (CharInd). 121 (51.1%) men reported 0 assault characteristics, 32 (13.5%) reported 1 characteristic, 24 (10.1%) reported 2 characteristics, 18 (7.6%) reported 3 characteristics and 7 (3%) reported 4 characteristics. 610 (42.5%) women reported 0 assault characteristics, 251 (17.5%) reported 1 characteristic, 221 (15.4%) reported 2 characteristics, 176 (12.3%) reported 3 characteristics and 56 (3.9%) reported 4 characteristics.

Table 4: Characteristics Index—Number of Characteristics Included in the Assault

| | Number of Characteristics | | | | | | | | | |
|--------|---------------------------|-------|--------|-------|--------|-------|--------|-------|--------|------|
| | 0 | | 1 | | 2 | | 3 | | 4 | |
| Gender | Number | % | Number | % | Number | % | Number | % | Number | % |
| Male | 121 | 51.1% | 32 | 13.5% | 24 | 10.1% | 18 | 7.6% | 7 | 3.0% |
| Female | 610 | 42.5% | 251 | 17.5% | 221 | 15.4% | 176 | 12.3% | 56 | 3.9% |

Note: Table indicates the numbers and percentages of all male and female respondents who have been sexually assaulted and who gave valid answers to the questions used to create the index.

Outcome Variables

Depression

The Depression Inventory that is used in the NVAWS is adapted from the SF-36 Health Survey, U.S. Acute Version, 1.0. There are eight questions used to create the inventory. These questions ask how often in the past week did the respondent feel nervous, down in the dumps, downhearted and blue, worn out, tired, full of pep (reverse coded), a lot of energy (reverse coded), and a happy person (reverse coded). The response categories are never (1), rarely (2), some of the time (3), and most of the time (4). The 8 questions in this inventory are coded (and reverse coded when necessary), and then scores on these items are summed, so that high scores suggest high levels of

depressive symptoms. The range of possible scores ranges from 8 to 32. This variable, DepScale, is used as a dependent variable in the Ordinary Least Squares regression discussed later. Prior work states that a cutoff point of greater than 19 on the depression scale is sufficient to conclude the respondent has significant depressive symptoms (Carbone-Lopez, Kruttschnitt, and MacMillan 2006; Coker et al. 2005; Coker et al. 2002). According to these works, a respondent that scores 20 or higher has significant depressive symptoms.

Alcohol Consumption

The Alcohol variable is coded so that the number of days in the past two weeks that the respondent has drunk alcoholic beverages is multiplied by the average number of drinks per day the respondent drank. This gives the estimated number of drinks the respondent drank in the two weeks preceding his or her NVAWS data collection. This variable, Alcohol, is used in the Ordinary Least Squares regression discussed later. The CDC defines “heavy drinking” as fifteen or more drinks per week for a man and eight or more drinks per week for a woman (CDC 2014a). This is the cutoff that is used in this analysis to determine alcohol abuse.

The Alcohol variable was skewed, so I also created a top coded Alcohol variable. In this variable, I coded respondents with 60 or more drinks as 60. This cutoff allowed the top 1% to be included in the analysis, but lessened the skewedness of the variable. This change had no effect on the analysis, so only the results for the original Alcohol variable are included below.

Control Variables

Race, age, substance use at the time of the assault, household income, employment status, education, and marital status are used as control variables in the analysis.

Race

Race is coded so that there are three dummy variables: white, black, and other. White is used as the reference category. Question B7 asks “Which of the following categories best describes your racial background?” The response categories are “White,” “Black/African American,” “Asian/Pacific Islander,” “American Indian/Alaskan Native,” and “Mixed Race.” White remains a category, Black/African American become “Black,” and the other three categories become “Other.”

Race has been documented as a factor that affects a person’s likelihood of becoming a victim. Elwood et al. (2011) also demonstrates that race has an effect, with both African Americans and “other” ethnic groups reporting lower rates of sexual assault than Caucasians. There are differences in developing depression, an internalizing symptom suffered by women, and substance abuse, an externalizing behavior suffered by men, that vary by race. The way people view masculinity and femininity also vary by race, which may affect how men and women react to sexual assault (Rosenfield, Phillips, and White 2006). Whites are also more likely to abuse alcohol than Blacks, Asians, and Hispanics (Grant et al. 2004). Because of literature like this, it is important to control for these factors so they do not have an unwanted impact on the final analysis.

Age

Age remains the same as it was in the original dataset—an interval/ratio variable. Question B1 asks “How old are you?” This question is answered in years. Those who respond that they are older than 97 are coded as “97” while all other ages are coded as the number of years. For example, a 27-year-old female would be coded as “27.”

Age has also been documented as a factor that affects a person’s likelihood of becoming a victim of sexual assault. Before adulthood, early adolescence is the age associated with the highest risk, and this increases with age (Elwood et al 2011). However, once adulthood is reached, younger ages are more at risk of becoming victims. It has also been shown that younger people have more symptoms of depression than older people (Simon and Lively 2010). According to Grant et al. (2004), younger respondents were more likely to have problems with alcohol abuse and dependence. There is a negative relationship with age and alcohol abuse. As age increases, alcohol abuse decreases.

Substance Use at the Time of the Assault

Substance use is coded so that a person who was using alcohol and/or drugs at the time of the assault is coded as using a substance. Question J14 asks “Were you using drugs or alcohol at the time of this incident?” The Substance variable is coded so that a respondent who said he or she had been drinking, on drugs, or both at the time of the assault is coded as a “Yes” in the Substance variable. This variable has a reference category of no substance use at the time of the assault.

Controlling for substance use at the time of the assault is important for several reasons. About half of all sexual assaults included alcohol use by either the victim, the perpetrator, or both (Kalmakis 2010). Risk of sexual assault is three times higher when a person is moderately or lightly drinking and nine times higher when the person is heavily drinking than on days where the person is not drinking. Sexual assaults that occur when victims are highly intoxicated are more likely to be violent, involve penetration, and involve less resistance (Kaysen et al. 2006).

Use of substances at the time of an assault may also influence the attributions victims make about the assault. For example, if a victim sees an event as dependent upon his or her behaviors, or some predisposition he or she has, the individual is 80% more likely to develop depression (Kendler, Karkowski, and Prescott 1999).

According to Kalmakis (2010), alcohol use in 72% of college sexual assault victims and adolescent use is highly related to sexual assault. Alcohol is the most common drug in victims (34.9-46.4 %), but these numbers are believed to be underestimated. Alcohol decreases cognitive functioning, which decreases one's ability to see risk cues and avoid danger. Statistics like these show that using alcohol makes a woman more vulnerable to being sexually assaulted, which can lead to a belief in false causal relationships. A victim can see his or her behavior as a "reason" he or she was sexually assaulted, and can then create a false causal relationship in his or her thought process between his or her behavior and the sexual assault. In this case, if a victim feels as though the event was dependent on his or her behavior (e.g., being drunk or high at the

time of the assault), he or she may be more likely to develop depression than a person who feels that he or she had no control over the event.

Because of the effect that substance use at the time of the assault can have on the victim and the subsequent possible negative health consequences, it should be included in the analysis as a control variable.

Employment Status

Question B4 asks “Are you currently...” with answer categories, “Employed full-time?” “Employed part-time?” “In the military?” “Unemployed and looking for work?” “Retired and not working?” “A student?” “A homemaker?” or “Something else?” This question is coded so that anyone employed full-time, part-time, or in the military is coded as “Employed.” Those who responded with any of the other categories are coded as “Not Employed.” Not Employed is used as the reference category in the regressions.

Employment status needs to be controlled within the models because of the effect it can have on the independent and dependent variables. Employment status can affect the sexual assault because of vulnerability and exposure. Unemployment is also associated with higher rates of depression (Zimmerman and Katon 2005; Dooley, Prause, and Ham-Rowbottom 2000). Unemployment and the lack of money that ensues can also lead to alcohol use (Rodriguez 2001).

Income

Question B11 asks “Including income from all sources, such as work, child support, AFDC, how much income did you personally receive in 1995 before taxes? Stop me when I get to the category that applies. Was it...” The response categories range

from “Less than \$5,000?” to “Over \$100,000.” This variable was recoded so that those who make less than \$35,000 are “Low” income, between \$35,000 and \$100,000 are “Middle” income, and over \$100,000 are “Upper.” Those who responded “None,” “Don’t know,” or “Refused” are coded as “Missing.” “Upper” is used as the reference category. Income is a sensitive subject, so there is a large number of missing respondents for this variable. People often do not want to disclose how much they earn. Because of the large number of respondents who responded in the “missing” categories, and the possibility that these respondents may be significantly different than the other respondents, the missing category is included as a dummy variable in the analysis.

Income also needs to be controlled within the models because of the effect it can have on the independent and dependent variables. Low incomes are associated with higher rates of depression (Zimmerman and Katon 2005; Hall, Williams, and Greenberg 1985). A lack of money can also lead to alcohol use (Rodriguez 2001).

Education

Question B6 asks “What is the highest level of education you have completed?” The response options are “No schooling,” “1st-8th grade,” “Some high school,” “High school graduate,” “Some college,” “4 Year College degree,” and “Postgraduate.” This variable is recoded so that someone with no schooling through some high school is coded as “Less than High School Graduate (LessHS).” High school graduates remain coded as “High School Graduate (HSGrad),” and those with some college or more are coded as “Some College Education or Higher (HigerEduc).” Some Education or Higher is used as the reference category in the regressions.

Education also has an effect on the independent and dependent variables. Generally, education and income are highly correlated, but the correlation between income and education in the NVAWS data is .166, so both variables are used in the regressions as controls (Morgan and David 1963). Education and depression have an inverse relationship that gets stronger with age (Miech and Shanahan 2000; Ross and Mirowsky 2006). As education increases, depression decreases. This relationship is steeper for women than it is for men. People with lower education, particularly those with less than a high school diploma, are more likely to have alcohol abuse problems than those who went on to higher education (Crum, Helzer, and Anthony 1993).

Marital Status

Question C1 asks “Now I’d like to ask you some questions about your current and past relationships. Are you currently...” with answer response categories “Married?” “Common-law relationship” “Divorced?” “Separated?” “Widowed?” and “Single and never married?” These categories are recoded so that those who are married or in a common-law relationship will be coded as “Married” while all of the other categories are coded as “Not Married.” Not Married is the reference category in the regressions.

Marriage is yet another variable that can have an effect on the independent and dependent variables. Those who are married report fewer problems with alcohol (Horwitz and White 1991). Married people have also been found to have less mental health problems. Unfortunately, the strain that comes with marriage has been found to cause alcohol problems (in men) and issues with depression (in women).

CHAPTER SEVEN

STATISTICAL PROCEDURES

First, I ran descriptive statistics on all of the variables included in the regressions. I then ran independent samples t-tests and chi-square tests to compare men and women within each of the variables. I chose an independent samples t-test because this test groups respondents by gender and then goes through each of the variables and examines differences in the means of the two groups. It then calculates the likelihood that the observed difference in the mean values resulted from sampling error alone (Babbie et al. 2013). For the variables with more than two categories, I ran chi-square tests to determine if the variables differ by gender. I also ran correlations on these variables for the whole sample and separately for men and women.

Hypotheses 1 and 2

For analyzing the relationship between whether the person was a victim of completed assault, a victim of attempted assault, or a nonvictim and depression and alcohol abuse, I used Ordinary Least Squares (OLS) regression. The dependent variables were treated as interval/ratio variables, therefore linear regression is the most appropriate form of analysis. I used the dummy variables for completed assault and attempted assault with a reference category of nonvictim. I ran separate regressions for men and women for the independent variables (Completed and Attempt) and each of the dependent variables (Depression and Alcohol Abuse), meaning there were two regressions for men (one for each dependent variable) and two for women (one for each dependent variable). These regressions included control variables for race, age, marital status, education,

employment status, and income. I then ran these regressions again combining females and males and adding an interaction term between the Completed variable and Gender and the Attempt variable and Gender to see whether the relationship between Completed and Attempted assault and each outcome significantly differed by gender.

Hypotheses 3 and 4

For analyzing the relationship between the index of the characteristics of the assault (violence, weapon use, threat of harm, and belief of harm) and the two outcome measures (depression and substance abuse), I used Ordinary Least Squares regression. The dependent variables were both treated as interval/ratio variables, and therefore linear regression is the most appropriate form of analysis. I used the dummy variables created for Violence, Weapon, Threat, and Belief in the Characteristics Index that measures the level of trauma. The Characteristics Index represented the independent variable in the equation. I ran separate regressions for men and women for the independent variable (Characteristics Index) and each of the dependent variables (Depression and Alcohol Abuse), meaning there were two regressions for men (one for each dependent variable) and two for women (one for each dependent variable). These regressions included control variables for race, age, substance use at the time of the assault, marital status, education, employment status, income, and attempted assault. Attempted assault was used here as a control variable to ensure that any differences between attempted sexual assault victims and completed sexual assault victims did not affect the analysis. I then ran these regressions again combining females and males and adding an interaction term

between the Characteristics Index and Gender to see whether the relationship between the characteristics index and each outcome significantly differed by gender.

The following models will be used in the analysis:

HYPOTHESIS 1

Dependent Variable: Depression

Women

Completed + Attempt + Black + Other + Age + Married + Less HS + HS Grad + Employed + Low + Middle + Missing

Men

Completed + Attempt + Black + Other + Age + Married + Less HS + HS Grad + Employed + Low + Middle + Missing

Dependent Variable: Alcohol Abuse

Women

Completed + Attempt + Black + Other + Age + Married + Less HS + HS Grad + Employed + Low + Middle + Missing

Men

Completed + Attempt + Black + Other + Age + Married + Less HS + HS Grad + Employed + Low + Middle + Missing

HYPOTHESIS 2

Interaction Term

Dependent Variable: Depression

Completed + Attempt + Black + Other + Age + Female + Married + Less HS + HS Grad + Employed + Low + Middle + Missing + Completed*Female + Attempt*Female

Dependent Variable: Alcohol Abuse

Completed + Attempt + Black + Other + Age + Female + Married + Less HS + HS Grad + Employed + Low + Middle + Missing + Completed*Female + Attempt*Female

HYPOTHESIS 3

Dependent Variable: Depression

Women

CharInd + Black + Other + Age + Substance + Married + Less HS + HS Grad +
Employed + Low + Middle + Missing + Attempt

Men

CharInd + Black + Other + Age + Substance + Married + Less HS + HS Grad +
Employed + Low + Middle + Missing + Attempt

Dependent Variable: Alcohol Abuse

Women

CharInd + Black + Other + Age + Substance + Married + Less HS + HS Grad +
Employed + Low + Middle + Missing + Attempt

Men

CharInd + Black + Other + Age + Substance + Married + Less HS + HS Grad +
Employed + Low + Middle + Missing + Attempt

HYPOTHESIS 4

Interaction Term

Dependent Variable: Depression

CharInd + Black + Other + Age + Female + Substance + Married + Less HS +
HS Grad + Employed + Low + Middle + Missing + Attempt+ CharInd*Female

Dependent Variable: Substance Abuse

CharInd + Black + Other + Age + Female + Substance + Married + Less HS +
HS Grad + Employed + Low + Middle + Missing + Attempt+ CharInd*Female

CHAPTER EIGHT

RESULTS

Univariate Results

Table 5 presents the descriptive statistics for the full analytic sample. Respondents reported a mean depression score of 15.16 (Std. Dev. = 4.08). This is below the cutoff for significant depression discussed earlier. The mean number of drinks consumed in the last two weeks for all English speaking respondents was 4.67 drinks (Std. Dev. = 13.69). This is below the cutoff for heavy drinking discussed earlier. 8% of the respondents were victims of completed assault and 2% were victims of attempted assault. The majority of respondents are white (84%), married (65%), employed (69%), have some college education or higher (58%), have a low income (54%), and are an average age of 43.31 years. In 1994, the Statistical Abstracts, published by the U.S. Census Bureau, states that the population of the United States was 83.15% white, 60.65% married, 94% employed, 45.2% some college education or higher, and 47.1% low income. This means that the sample used in my analysis is similar to the population in the United States at the time. Race, marital status, and education are very similar. Employment may be slightly different because of the categories that were defined as unemployed. In my analysis, I included those who did not have jobs and those who were not actively seeking jobs in the not employed variable. This is not the case with the Census Bureau's variable. Income may differ because my highest income category is \$100,000+ while the Census Bureau's highest category is \$75,000+. Nonetheless, these

statistics show that the demographic characteristics of the NVAWS are very similar to the United States population at the time.

| Table 5: Descriptive Statistics for All English Speakers | | | |
|---|-----------------------------|-------------|-----------------------|
| | All English Speakers | | |
| | Range | Mean | Std. Deviation |
| Variables: Dependent | | | |
| Depression Scale | 8-32 | 15.16 | 4.08 |
| Alcohol Scale | 0-280 | 4.67 | 13.69 |
| Variables: Independent | | | |
| Completed | 0-1 | .08 | -- |
| Attempt | 0-1 | .02 | -- |
| Variables: Control | | | |
| Black | 0-1 | .09 | -- |
| Other | 0-1 | .07 | -- |
| Age | 18-97 | 43.31 | 15.76 |
| Female | 0-1 | .47 | -- |
| Married | 0-1 | .65 | -- |
| Less than HS | 0-1 | .09 | -- |
| HS Grad | 0-1 | .33 | -- |
| Employed | 0-1 | .69 | -- |
| Low Income | 0-1 | .54 | -- |
| Middle Income | 0-1 | .24 | -- |
| Missing Income | 0-1 | .19 | -- |
| N = 13424 | | | |

Table 6 presents descriptive statistics separately for English speaking female and male respondents. The mean depression score was 15.66 (Std. Dev.= 4.24) for women, which is lower than the cutoff for significant depression, but higher than that for men. The mean depression score for men was 14.71 (Std. Dev.= 3.89), which is also lower than the cutoff for significant depression. The independent samples t-test shows that there is a significant difference between the depression score for men and women, with women reporting higher depression scores.

The mean average number of drinks consumed in the last two weeks for all English speaking female respondents was 2.28 (Std. Dev.= 6.36) drinks, which is lower than the cutoff for heavy drinking, and also lower than that for men. The mean average number of drinks consumed in the last two weeks for all English speaking male respondents was 6.74 (Std. Dev.= 17.49) drinks, which is also lower than the cutoff for heavy drinking. The independent samples t-test shows that there is a significant difference between alcohol consumption for men and women, with men reporting higher alcohol consumption.

The differences between men and women with respect to depression and alcohol are consistent with the literature that states that women are more likely than men to be depressed, while men are more likely than women to consume alcohol.

15% of the female respondents were victims of completed assault and 3% were victims of attempted assault. 2% of the male respondents were victims of completed assault and 1% were victims of attempted assault. The t-tests for testing the differences between men and women for completed sexual assault, attempted sexual assault, and nonvictims were all significant at the .001 level, suggesting there are significant gender differences. Because women are far more likely to be victims of sexual assault, these findings are consistent with the previously mentioned literature.

The majority of female respondents are white (84%), married (63%), employed (61%), with some college education or higher (56%), a low income (61%), and an average age of 44.22 years. The majority of male respondents are white (84%), married

(67%), employed (76%), with some college education or higher (60%), a low income (48%), and an average age of 42.51 years.

Though these distributions are largely similar, the t-tests, of those variables used in the regressions show that men and women are significantly different in the black and other race categories, age, marital status, the high school graduate category, employment status, and all of the levels of income. There are significantly more black women than men, and more non-white men than women. The average age of female respondents is significantly older than that of male respondents. There are significantly fewer married and employed women than men. Lastly, there are significantly more low and missing income female respondents than male respondents, but significantly more middle income male respondents than female respondents. The only variable used in the regressions that did not show a significant difference between men and women was the less than high school education variable.

Table 6: Descriptive Statistics for Women and Men

| | Women (N=6246) | | | Men (N=7178) | | | Sig. of Gender Differences |
|-------------------------------|----------------|-------|----------------|--------------|-------|----------------|----------------------------|
| | Range | Mean | Std. Deviation | Range | Mean | Std. Deviation | |
| Variables: Dependent | | | | | | | |
| Depression Scale | 8-32 | 15.66 | 4.24 | 8-32 | 14.71 | 3.89 | .000 |
| Alcohol Scale | 0-98 | 2.28 | 6.36 | 0-280 | 6.74 | 17.49 | .000 |
| Variables: Independent | | | | | | | |
| Completed | 0-1 | .15 | -- | 0-1 | .02 | -- | .000 |
| Attempt | 0-1 | .03 | -- | 0-1 | .01 | -- | .000 |
| Variables: Control | | | | | | | |
| Black | 0-1 | .10 | -- | 0-1 | .08 | -- | .001 |
| Other | 0-1 | .06 | -- | 0-1 | .08 | -- | .001 |
| Age | 18-95 | 44.22 | 15.97 | 18-91 | 42.51 | 15.27 | .000 |
| Married | 0-1 | .63 | -- | 0-1 | .67 | -- | .000 |
| Less than HS | 0-1 | .09 | -- | 0-1 | .09 | -- | .427 |
| HS Grad | 0-1 | .35 | -- | 0-1 | .31 | -- | .000 |
| Employed | 0-1 | .61 | -- | 0-1 | .76 | -- | .000 |
| Low Income | 0-1 | .61 | -- | 0-1 | .48 | -- | .000 |
| Middle Income | 0-1 | .15 | -- | 0-1 | .33 | -- | .000 |
| Missing Income | 0-1 | .23 | -- | 0-1 | .16 | -- | .000 |

Note: The depression scale, the alcohol scale, age, married, and employed gender differences were examined using a t-test. Black, other, less than HS, HS grad, low income, middle income, and missing income gender differences were examined using a chi-square test.

Bivariate Results

Table 7 shows the correlations among the dependent variables, the independent variables, and the controls that were used in the full sample regressions. I created these correlation tables to show that these variables were not highly correlated with each other in order to show that collinearity was not an issue. There were no strong correlations between any of the independent variables and the dependent variables.

All of the independent and control variables were significantly correlated with the first dependent variable, the depression scale. Depressive symptoms were positively correlated with completed and attempted sexual assaults, being black, being of another non-white racial group, being female, having less than a high school education, being a

high school graduate, and having a low income. Depressive symptoms were negatively correlated with age, being married, being employed, and having a missing income.

The dependent variable, alcohol, was significantly negatively correlated with completed sexual assaults, but was not significantly correlated with attempted sexual assaults. Alcohol use was positively correlated with being employed and having a middle income. Alcohol use was negatively correlated with being black, age, being female, being married, having less than a high school education, and having a missing income.

The independent variable, completed sexual assault, was positively correlated with being of another non-white race, being female, and having a low income. Completed sexual assault was negatively correlated with age, being married, being employed, and having a middle or missing income.

The independent variable, attempted sexual assault, was positively correlated with being female and negatively correlated with age, being married, and having a missing income.

Table 8 shows the correlations of the dependent variables, the independent variables, and the controls that were used in the full sample regressions again, broken down by gender.

For men and women, the majority of the correlations maintained the same direction and significance as the results for the full sample, but there were some exceptions. For women, depression was not associated with being a high school graduate. Alcohol consumption was no longer associated with completed assaults but the association between attempted assaults and alcohol use gained significance. Completed

and attempted assault's associations with control variables were quite different from those reported in the sample as a whole. Among women, experiencing a completed assault was associated with being a high school graduate and with being employed but not with being middle income. Attempted assaults among women were associated with having less than a high school education, being employed, and having a middle income whereas these were not associated in the full sample.

For men, depression was no longer associated with being black, but the association between depression and alcohol use gained significance. Alcohol consumption was no longer associated with completed assault, having less than a high school education, being employed, or having a middle or missing income, however, the association between alcohol consumption and having a low income gained significance. Completed and attempted assault's associations with control variables were quite different from those reported in the sample as a whole. Among men, experiencing a completed assault was no longer associated with age, being employed, or having a middle income. Experiencing an attempted assault was no longer associated with having a missing income, but the relationship between experiencing an attempted assault and being a high school graduate gained significance.

Table 7: Correlation Matrix of Variables Included in the Regressions: All Respondents (N=13,424)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----|
| 1. DepScale | 1 | | | | | | | | | | | | | | |
| 2. Alcohol | .011 | 1 | | | | | | | | | | | | | |
| 3. Completed | .143** | -.033** | 1 | | | | | | | | | | | | |
| 4. Attempt | .044** | .002 | -.042** | 1 | | | | | | | | | | | |
| 5. Black | .020* | -.031** | .015 | .001 | 1 | | | | | | | | | | |
| 6. Other | .044** | .011 | .026** | .001 | -.088** | 1 | | | | | | | | | |
| 7. Age | -.061** | -.055** | -.074** | -.044** | -.073** | -.108** | 1 | | | | | | | | |
| 8. Female | .116** | -.163** | .240** | .078** | .031** | -.028** | .055** | 1 | | | | | | | |
| 9. Married | -.098** | -.172** | -.075** | -.031** | .063** | -.047** | .168** | -.042** | 1 | | | | | | |
| 10. Less HS | .116** | -.018* | .013 | -.014 | .063** | .027** | .120** | .010 | -.077** | 1 | | | | | |
| 11. HS Grad | .038** | .005 | -.016 | -.015 | .001 | -.025** | -.006 | .049** | -.017* | -.223** | 1 | | | | |
| 12. Employed | -.080** | .041** | -.022* | .012 | -.005 | -.005 | -.334** | -.161** | .087** | -.176** | -.063** | 1 | | | |
| 13. Low | .146** | -.001 | .091** | .012 | .077** | .035** | -.149** | .134** | -.209** | .084** | .124** | -.103** | 1 | | |
| 14. Middle | -.108** | .024** | -.057** | .005 | -.059** | -.011 | .013 | -.210** | .163** | -.130** | -.141** | .233** | -.612** | 1 | |
| 15. Missing | -.042** | -.037** | -.043** | -.018* | -.026** | -.026** | .160** | .094** | .058** | .053** | -.030** | -.147** | -.529** | -.278** | 1 |

Note: *** p < .001 ** p < .01 * p < .05

Table 8: Correlation Matrix of Variables Included in the Regressions: Men and Women (Lower: Women N=6246; Upper: Men N=7178)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|--------------|---------|---------|---------|---------|---------|---------|---------|-----|---------|---------|---------|---------|---------|---------|---------|
| 1. DepScale | 1 | | | | | | | | | | | | | | |
| 2. Alcohol | .009 | .043** | .067** | .027* | -.001 | .054** | -.067** | N/A | -.106** | .099** | .045** | -.093** | .157** | -.102** | -.050** |
| 3. Completed | .154** | .017 | .004 | .002 | -.025* | .016 | -.058** | N/A | -.103** | .000 | .022 | .010 | .030* | -.021 | -.021 |
| 4. Attempt | .041** | .052** | -.075** | .013 | -.001 | .013 | -.013 | N/A | -.036** | -.007 | .002 | -.015 | .145** | -.021 | -.030* |
| 5. Black | .034** | -.043** | .013 | -.011 | .013 | .010 | -.033** | N/A | -.026* | .016 | -.029* | .014 | -.004 | .014 | -.010 |
| 6. Other | .040** | -.023 | .050** | -.001 | -.088** | .010 | -.088** | N/A | -.131** | .048** | .010 | -.023 | .084** | -.074** | -.005 |
| 7. Age | -.070** | -.035** | -.134** | -.061** | -.073** | -.107** | -.106** | N/A | -.068** | .030* | -.013 | -.021 | .047** | -.030* | -.014 |
| 8. Female | N/A | N/A | N/A | N/A | -.073** | -.107** | .1 | N/A | .300** | .086** | -.073** | -.335** | -.169** | .065** | .114** |
| 9. Married | -.080** | -.043** | -.089** | -.031* | -.193** | -.024 | .034** | N/A | N/A | N/A | -.048** | .108** | -.269** | .218** | N/A |
| 10. Less HS | .132** | -.073** | .020 | -.036** | .077** | .025* | .155** | N/A | -.099** | .1 | -.209** | -.171** | .131** | -.143** | .034** |
| 11. HS Grad | .019 | -.009 | -.045** | -.013 | -.012 | -.037** | .060** | N/A | .020 | -.240** | .1 | -.026 | .166** | -.131** | -.010 |
| 12. Employed | -.034** | .036** | .032* | .032* | .020 | .002 | -.325** | N/A | -.184** | -.086** | -.086** | .1 | -.180** | .228** | -.084** |
| 13. Low | .107** | .001 | .078** | .006 | .063** | .028* | -.145** | N/A | -.132** | .029* | .064** | .017 | -.180** | -.665** | -.414** |
| 14. Middle | -.067** | .033** | -.001 | .033** | -.027* | .004 | -.031* | N/A | .074** | -.116** | -.141** | .187** | -.519** | .1 | -.304** |
| 15. Missing | -.058** | -.037** | -.088** | -.035** | -.050** | -.034** | .196** | N/A | .078** | .070** | .058** | -.179** | -.690** | -.229** | .1 |

Note: *** p < .001 ** p < .01 * p < .05

Regression Results

Table 9 A shows the results for the test of Hypothesis 1 with respect to depression. Hypothesis 1 stated that victims of completed and attempted assault will experience more depressive symptoms and alcohol abuse responses than nonvictims. Model 1 shows the results for the model run with female respondents only. Both completed and attempted sexual assaults were significantly and positively related to depression for women, meaning that both completed and attempted female assault victims have significantly higher levels of depression than female nonvictims. Female completed sexual assault victims scored 1.646 points higher than nonvictims on the depression scale. Female attempted sexual assault victims scored 1.303 points higher than nonvictims on the depression scale. Of the control variables, not finishing high school and finishing high school but not attending college were both associated with elevated depression relative to those who attended some college or higher. Similarly, being of low income was associated with depression relative to those in the highest income category. Older female respondents had lower depression scores. Married women were less depressed than not married women and employed were less depressed than not employed. Race was unrelated to depression among women.

Model 2 of Table 9 A shows the results for Hypothesis 1 among men. Both completed and attempted sexual assaults were significantly and positively related to depression for men, meaning that both completed and attempted male assault victims have significantly higher levels of depression than male nonvictims. Male completed sexual assault victims scored 1.625 points higher than nonvictims on the depression scale.

Male attempted sexual assault victims scored 1.059 points higher than nonvictims on the depression scale. Of the control variables, being black was associated with lower levels of depression relative to being white, while being of another non-white race was associated with higher levels of depression relative to being white. Not finishing high school and finishing high school but not attending college were both associated with elevated depression relative to those who attended some college or higher. Similarly, being of low income was associated with increased depression relative to those in the highest income category. Older male respondents had lower depression scores. Men who were married were less depressed than not married men and men who were employed were less depressed than those not employed.

Table 9 A: Ordinary Least Square Coefficients for Depression Regressed on Completed and Attempted Assault

| Variable | Model 1: Women N=6246 | | Model 2: Men N=7178 | |
|----------------------|--------------------------|------------|------------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 14.959*** | .572 | 15.018*** | .321 |
| Completed | 1.646*** | .148 | 1.625*** | .318 |
| Attempt | 1.303*** | .304 | 1.059* | .470 |
| Black | .116 | .178 | -.332* | .165 |
| Other | .390 | .216 | .468** | .169 |
| Age | -.018*** | .004 | -.016*** | .003 |
| Married | -.326** | .112 | -.363** | .105 |
| Less than HS | 2.066*** | .192 | 1.144*** | .166 |
| HS Grad | .509*** | .115 | .314** | .102 |
| Employed | -.262* | .117 | -.684*** | .119 |
| Low Income | 1.426** | .534 | 1.290*** | .248 |
| Middle Income | .790 | .545 | .569* | .245 |
| Missing Income | .836 | .541 | .450 | .261 |
| R² | .062 | | .049 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: Nonvictim, white, not married, some college education or higher, not employed, and upper income are the reference categories used in the regression.

Table 9 B shows the results for the test of Hypothesis 1 with respect to alcohol. Model 1 shows the results for the model run with female respondents only. Attempted sexual assault was significantly and positively related to alcohol use for women, meaning that attempted assault female victims drink significantly more alcohol than nonvictims. Female attempted sexual assault victims drank 1.679 drinks more than nonvictims. Completed sexual assault was not significant, meaning female alcohol consumption does not differ between completed assault victims and nonvictims. Of the control variables, being black or of another non-white race was associated with less alcohol use, relative to being white. Married women were less likely to use alcohol than not married women. Women with less than a high school education used less alcohol, relative to women with some college education or higher. Women with low, middle, or missing incomes also used alcohol less than women with upper incomes.

Model 2 of Table 9 B tests Hypothesis 1 among men regarding alcohol use. Neither completed nor attempted sexual assaults were significantly related to alcohol use for men. Of the control variables, being black was associated with lower levels of alcohol use relative to being white. Married men are less likely to use alcohol than not married men. Men with low, middle, or missing incomes used alcohol less than men with upper incomes.

Table 9 B: Ordinary Least Square Coefficients for Alcohol Abuse Regressed on Completed and Attempted Assault

| Variable | Model 1: Women N=6246 | | Model 2: Men N=7178 | |
|----------------------|--------------------------|------------|------------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 5.583*** | .877 | 12.430*** | 1.469 |
| Completed | .249 | .227 | .038 | 1.456 |
| Attempt | 1.679*** | .466 | -.128 | 2.153 |
| Black | -1.136*** | .273 | -2.474** | .754 |
| Other | -.808* | .331 | .239 | .773 |
| Age | -.006 | .005 | -.030 | .016 |
| Married | -.798*** | .172 | -3.764*** | .482 |
| Less than HS | -1.476*** | .294 | .352 | .762 |
| HS Grad | -.221 | .177 | .727 | .467 |
| Employed | .156 | .179 | .424 | .544 |
| Low Income | -2.337** | .819 | -2.278* | 1.137 |
| Middle Income | -1.982* | .836 | -2.253* | 1.122 |
| Missing Income | -2.578** | .829 | -2.786* | 1.194 |
| R² | .017 | | .014 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: Nonvictim, white, not married, some college education or higher, not employed, and upper income are the reference categories used in the regression.

Table 10 shows the results for the test of Hypothesis 2 with respect to depression and alcohol use. Hypothesis two stated that gender will moderate the relationship between the victims and nonvictims and depressive symptoms and alcohol abuse responses. In these models, I created an interaction term between completed sexual assaults and gender by multiplying the dummy variable for completed sexual assault that is used in the regression by the dummy variable for female that is used in the regression. I created the interaction term between attempted sexual assault and gender by multiplying the dummy variable for attempted sexual assault that is used in the regression by the dummy variable for female that is used in the regression. These results are controlling for an interaction between attempt and gender and complete and gender.

In Model 1, the interaction term was not significant, meaning that the differences between completed assault victims and nonvictims and the differences between attempted assault victims and nonvictims developing depression do not significantly differ by gender. Of the control variables, other non-white races had higher levels of depression, relative to whites, and women had higher levels of depression than men. Older respondents have lower scores for depression, and married respondents have lower scores than not married respondents. Those with less than a high school education or high school graduates have higher depression scores than those with some college education or higher. Employed respondents had lower scores of depression than not employed respondents, and respondents with low, middle, and missing incomes had higher levels of depression than upper income respondents. The interactions between attempted and completed assault and gender were not significant in this model, meaning gender does not appear to moderate the association between the type of sexual assault (attempted or completed) and depression.

In Model 2, the interaction term was not significant, meaning that the differences between completed assault victims and nonvictims and the differences between attempted assault victims and nonvictims developing alcohol abuse do not significantly differ by gender. Of the control variables, black respondents had lower levels of alcohol consumption than whites. Older respondents also had lower levels of alcohol consumption. Women consumed less alcohol than men and married respondents consumed less alcohol than not married respondents. Respondents with low, middle, or missing incomes had lower levels of alcohol consumption than the upper income

respondents. The interactions between attempted and completed assault and gender were not significant in this model either, meaning gender does not appear to moderate the association between the type of sexual assault (attempted or completed) and alcohol abuse.

Table 10: Ordinary Least Square Coefficients for Depression and Alcohol Abuse Regressed on Completed and Attempted Assault—Testing for Gender Moderation

| Variable | Model 1: Depression N=13,424 | | Model 2: Alcohol N=13,424 | |
|----------------------|---------------------------------|------------|------------------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 14.775*** | .270 | 11.479*** | .918 |
| Completed | 1.654*** | .330 | .210 | 1.125 |
| Attempt | 1.028* | .489 | .064 | 1.664 |
| Black | -.093 | .121 | -1.940*** | .411 |
| Other | .442** | .134 | -.175 | .456 |
| Age | -.016*** | .002 | -.027** | .008 |
| Female | .523*** | .075 | -4.405*** | .257 |
| Married | -.358*** | .076 | -2.361*** | .258 |
| Less than HS | 1.579*** | .126 | -.501 | .428 |
| HS Grad | .399*** | .076 | .326 | .260 |
| Employed | -.466*** | .083 | .221 | .281 |
| Low Income | 1.274*** | .228 | -2.063** | .774 |
| Middle Income | .597** | .229 | -2.084** | .778 |
| Missing Income | .564* | .235 | -2.430** | .800 |
| Completed*Female | -.002 | .359 | -.293 | 1.221 |
| Attempt*Female | .258 | .568 | 1.384 | 1.935 |
| R² | .067 | | .037 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: Nonvictim, white, male, not married, some college education or higher, not employed, and upper income are the reference categories used in the regression.

Hypothesis 3 stated that during a sexual assault, victims whose assaults had a higher level of trauma (those who were threatened with harm, believed they would be harmed, and/or were assaulted by a perpetrator using violence or a weapon) would report more depressive symptoms or alcohol abuse responses than victims whose assaults exhibited fewer of these characteristics.

For hypotheses 3 and 4 I used the Characteristics Index variable to measure the trauma associated with sexual assault. This measure has a range from 0 to 4, and has an average characteristic index score of 1.07 (Std. Dev.= 1.24) for both males and females. The average characteristic index score for female respondents is 1.13 (Std. Dev.= 1.25) and for male respondents is .76 (Std. Dev.=1.15). The t-test for this variable was significant at the .01 level, suggesting that women report more violent assaults than do men.

The results for hypothesis 3 with respect to depression are presented in Table 11A. Model 1 presents the coefficients for women. There was no association between the characteristics of the assault and depression among women. Among the control variables, married women were less depressed than not married women and employed women were less depressed than not employed women. Women with less than a high school education or a high school degree were both more depressed than women with some college education or higher.

Model 2 presents the coefficients for men. There was no association between the characteristics of the assault and depression among men. Among the control variables, men with less than a high school education were more depressed than those with some college education or higher. Employed men were less depressed than not employed men.

Table 11 A: Ordinary Least Square Coefficients for Depression Regressed on the Characteristics of the Assault Index

| Variable | Model 1: Women N=1040 | | Model 2: Men N=182 | |
|----------------------|--------------------------|------------|-----------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 16.118*** | 1.523 | 20.340*** | 2.629 |
| Characteristics | | | | |
| Index | -.022 | .116 | -.082 | .256 |
| Black | -.437 | .457 | -1.877 | .987 |
| Other | .070 | .506 | -.387 | .976 |
| Age | .008 | .011 | -.024 | .023 |
| Substance | .261 | .386 | 1.484 | .761 |
| Married | -.801** | .287 | -.902 | .627 |
| Less than HS | 1.771*** | .502 | 3.370** | 1.064 |
| HS Grad | .622* | .314 | .455 | .709 |
| Employed | -.935** | .303 | -2.429** | .710 |
| Low Income | 1.840 | 1.429 | -.883 | 2.252 |
| Middle Income | .468 | 1.457 | -1.961 | 2.227 |
| Missing Income | .763 | 1.468 | .170 | 2.391 |
| Attempt | -.384 | .380 | -.642 | .635 |
| R² | .065 | | .240 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: White, no substance use, not married, some college education or higher, not employed, upper income, and completed assault are the reference categories used in the regression.

The results for hypothesis 3 with respect to alcohol consumption are presented in Table 11B. Model 1 presents the coefficients for women. There was no association between the characteristics of the assault and alcohol consumption among women. Among the control variables, married women consumed less alcohol than not married women. Women who were using a substance at the time of the assault consumed more alcohol than those who were not using a substance at the time of the assault. Women who were victims of attempted sexual assault also drank more than victims of completed assault.

Model 2 presents the coefficients for men. There was no association between the characteristics of the assault and alcohol consumption among men. Among the control variables, men of another non-white race consumed more alcohol than white men.

Table 11 B: Ordinary Least Square Coefficients for Alcohol Abuse Regressed on the Characteristics of the Assault Index

| Variable | Model 1: Women N=1046 | | Model 2: Men N=181 | |
|-----------------------|--------------------------|------------|-----------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 6.138** | 2.150 | -5.230 | 13.235 |
| Characteristics Index | .019 | .169 | .175 | 1.319 |
| Black | -1.304 | .673 | 2.823 | 4.964 |
| Other | .012 | .739 | 10.200* | 4.941 |
| Age | -.004 | .016 | .172 | .118 |
| Substance | 2.484*** | .566 | 3.292 | 3.895 |
| Married | -1.282** | .421 | -3.111 | 3.187 |
| Less than HS | -.948 | .739 | 2.837 | 5.483 |
| HS Grad | -.173 | .460 | .308 | 3.597 |
| Employed | .381 | .444 | 4.884 | 3.564 |
| Low Income | -3.513 | 2.006 | 2.432 | 11.334 |
| Middle Income | -3.513 | 2.048 | .633 | 11.194 |
| Missing Income | -3.459 | 2.062 | -1.406 | 11.948 |
| Attempt | 1.599** | .554 | -1.168 | 3.177 |
| R² | .046 | | .062 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: White, no substance use, not married, some college education or higher, not employed, upper income, and completed assault are the reference categories used in the regression.

The results for Hypothesis 4 are presented in Table 12. Hypothesis 4 stated that the gender of the victim will moderate the relationship between the characteristics of the assault and depressive symptoms or alcohol abuse. In order to test whether gender moderates the association between characteristics of the assault and depression and alcohol use, I created an interaction term by multiplying the Characteristics Index and Gender.

Model 1 presents the coefficients for the dependent variable depression. The interaction term was not significant, meaning that the differences between victims with different characteristics of the assault developing depression do not significantly differ by gender. Among the control variables in Table 12, Model 1, married respondents were less depressed than not married respondents and employed respondents were less depressed than not employed respondents. Those with less than a high school education or a high school degree were more depressed than those with some college education or higher.

Model 2 presents the coefficients for the dependent variable alcohol consumption. The interaction term was not significant, meaning that the differences between victims with different characteristics of the assault developing alcohol abuse do not significantly differ by gender. Among the control variables, respondents who were using a substance at the time of the assault consumed more alcohol than respondents who were not using a substance at the time of the assault. Married respondents consume less alcohol than not married respondents and women consume less than men.

Table 12: Ordinary Least Square Coefficients for Depression and Alcohol Abuse Regressed on the Characteristics of the Assault Index—Testing for Gender Moderation

| Variable | Model 1: Depression N=1222 | | Model 2: Alcohol N=1227 | |
|----------------------|-------------------------------|------------|----------------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 16.289*** | 1.369 | 7.729** | 2.853 |
| Characteristics | | | | |
| Index | -.113 | .285 | .476 | .629 |
| Black | -.557 | .415 | -.923 | .891 |
| Other | -.015 | .453 | 1.622 | .966 |
| Age | .005 | .010 | .016 | .021 |
| Substance | .417 | .345 | 2.898*** | .739 |
| Married | -.854** | .261 | -1.541** | .558 |
| Less than HS | 2.001*** | .452 | -.862 | .973 |
| HS Grad | .591* | .286 | -.115 | .613 |
| Employed | -1.063*** | .278 | .735 | .593 |
| Low Income | 1.325 | 1.230 | -2.069 | 2.541 |
| Middle Income | -.078 | 1.249 | -2.758 | 2.582 |
| Missing Income | .473 | 1.269 | -2.804 | 2.623 |
| Attempt | -.380 | .328 | 1.087 | .699 |
| Female | .506 | .437 | -3.573*** | .932 |
| CharInd*Female | .092 | .304 | -.496 | .668 |
| R² | .083 | | .053 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: White, no substance use, not married, some college education or higher, not employed, upper income, completed assault, and male are the reference categories used in the regression.

As part of my sensitivity analysis, I broke the four characteristics of the assault (violence, weapon use, threat of harm, and belief of harm) down into individual models with the control variables and ran separate models for each of the characteristics that were used in the index. The only significant coefficients in these models, like the models used to test hypotheses 3 and 4, were control variables. The relationships between each of the individual characteristics and developing depression or alcohol abuse were not significant.

Also in sensitivity analysis, I ran another OLS regression on the victim-only sample that contained all of the variables in the models for hypothesis 4, but instead of researching the interaction between gender and the characteristics index, I decided to add an interaction term between the characteristics index and “attempt.” For depression, there was no significant interaction (B=-.310; Sig. .351), but for alcohol, there was a significant interaction (B=1.492; Sig. .035). This suggests that more traumatic attempted assaults may be associated with higher levels of drinking.

Table 13: Ordinary Least Squares Regression with Characteristics of the Assault*Attempted Assault

| Variable | Model 1: Depression N=1222 | | Model 2: Alcohol N=1227 | |
|-----------------------|-------------------------------|------------|----------------------------|------------|
| | B | Std. Error | B | Std. Error |
| Constant | 16.169*** | 1.361 | 8.315** | 2.828 |
| Characteristics Index | .002 | .112 | -.127 | .238 |
| Black | -.561 | .415 | -.923 | .889 |
| Other | -.009 | .453 | 1.596 | .965 |
| Age | .005 | .010 | .016 | .021 |
| Substance | .414 | .345 | 2.903*** | .738 |
| Married | -.846** | .261 | -1.583** | .557 |
| Less than HS | 2.013*** | .452 | -.860 | .971 |
| HS Grad | .597* | .286 | -.142 | .612 |
| Employed | -1.072*** | .277 | .787 | .592 |
| Low Income | 1.350 | 1.230 | -2.170 | 2.537 |
| Middle Income | -.041 | 1.249 | -2.919 | 2.580 |
| Missing Income | .503 | 1.268 | -2.933 | 2.619 |
| Attempt | -.209 | .377 | .270 | .801 |
| Female | .567 | .359 | -3.891*** | .770 |
| CharInd*Attempt | -.310 | .332 | 1.492* | .708 |
| R² | .084 | | .056 | |

Note: *** p < .001 ** p < .01 * p < .05

Note: White, no substance use, not married, some college education or higher, not employed, upper income, completed assault, and male are the reference categories used in the regression.

Finally, in sensitivity analysis, I re-ran the models for hypotheses 1 through 4 using Binary Logistic regression with dichotomous dependent variables for depression and alcohol abuse. The results were very similar to the OLS regression results. The only differences were that male attempted sexual assault victims were not significantly different than nonvictims in their development of depression, whereas they were in the OLS regression, and that female completed sexual assault victims drank significantly more than nonvictims, whereas they did not in the OLS regression. For hypothesis 2, the significance of the interaction term between attempted or completed sexual assault and gender did not gain significance. The independent variables and interaction terms in hypotheses 3 and 4 did not gain significance either. Details for this analysis can be seen in Appendix C.

CHAPTER NINE

DISCUSSION

I set out to discover whether the male and female experiences of sexual assault result in different mental health or substance abuse outcomes. I wanted to know if, when men and women experience sexual assault, do they differ in the consequences they experience? The results for hypotheses 1 and 2 show us that men and women are quite similar in their responses to sexual assault. Instead, the primary differences are between victims and nonvictims.

Female victims showed the expected results for depression responses. Completed and attempted sexual assaults were both significantly associated with female victims developing more severe depression than female nonvictims. Although attempted sexual assault does not conclude with penetration, the trauma of the attack itself is severe enough for the victim that it causes significantly higher levels of depression than those occurring in female nonvictims. They were attacked, regardless of if penetration actually occurred. The violation of sexual assault is severe, and these results suggest that completed and attempted sexual assaults result in the same types of ruminating and self-directed anger behaviors in women.

I also hypothesized, based on the norm of hegemonic masculinity, that an attempted assault for a man will not have as severe consequences toward his masculinity as would a completed assault and did not find support. Male victims of attempted and completed sexual assault are more likely to be depressed than male nonvictims. This finding means that men who are victims of attempted and completed sexual assault both

develop depression significantly more severely than male nonvictims do. This does not show support for the thought that men have a harder time dealing with, and therefore have more severe reactions from, a completed sexual assault, whereas attempted sexual assaults do not threaten their identities as strongly. Men are depressed after being sexually assaulted, whether completed or attempted, and may respond to the violation of masculinity norms by becoming depressed. When a man's gender norms are violated, as it relates to his status in hegemonic masculinity, depression may be a primary reaction. These results suggest the depression is a correlate of sexual assault for both sexes.

Female victims showed partially expected results for alcohol use responses. According to these results, female victims of attempted sexual assault are significantly more likely to drink than female nonvictims while completed sexual assault victims are not.¹ This finding is surprising because of the expectation that both attempted sexual assault and completed sexual assault will have the same effects for women. However, female victims clearly experience more depressive symptoms and alcohol abuse responses than female nonvictims. This is as expected according to the literature.

What is even more surprising is that among men, there are no differences between attempted assault victims or completed assault victims, and nonvictims, in their alcohol consumption behaviors. Although this may very easily be because of the small sample size, this could also mean that men do not turn to alcohol in the way that was predicted. According to these statistics, male nonvictims drink just as much as male victims do. These results suggest that men are not more likely to turn to alcohol in the wake of a

¹ When using Binary Logistic Regression, female completed victims are also more likely to have an alcohol problem than nonvictims.

sexual assault. Although men may use alcohol to avoid and cope, these data do not support the argument that alcohol consumption is higher among male sexual assault victims than among non-victims. This may show evidence that men drink for other reasons, that drinking is not the choice of coping mechanism for men, or that even if victims drink to cope, they do not drink more than they would have before the sexual assault. The lack of differences for males may also be due to the small sample size or the fear of stigma for reporting victimization. Past literature also focuses on female victims, so there is not a vast pool of knowledge of male responses from which to pull information like there is for female victims.

Hypothesis two was not supported. There is not a significant gender interaction between attempted or completed assaults and developing depression or alcohol abuse. This means that gender does not moderate the relationship between the type of assault and developing depression or alcohol abuse.

The results were not significant for hypotheses three and four, which suggests that the level of trauma during the sexual assault may not affect a victim's development of depression or alcohol abuse. A person with only one, or even none, of these types of trauma appears to have the same types of responses with depression and alcohol abuse as someone who has four, and here again, there is no interaction with gender. If the amount of violence, weapons, threat of harm, or belief of harm do not affect a person's reaction to the assault, this information could help battle rape myths. For example, if the amount of force used during the sexual assault does not affect a person's depression or alcohol abuse problems after the assault, this would suggest that any force at all, or even a lack

thereof, is enough to cause problems for the victim. Someone victimized in a less forceful attack may be no less mentally and emotionally harmed than someone with a very forceful attack. All levels of trauma during a sexual assault appear to have similar associations with depression and alcohol abuse. This is something that is not consistent with past literature, but may need to be examined more closely (Follette et al. 1996; Resnick et al. 1993; Stewart 1996; Kilpatrick et al. 2003).

What makes these results different from past literature? First, using a nationally representative sample that includes men changes the analysis. Most research does not include men at all, much less attempt to examine gender interactions. Second, much of the literature that is cited in the literature review is based on longitudinal studies that follow victims from immediately after the assault up to 3 years later. For example, one study by Kilpatrick et al. (1997) followed 3,006 women for 2 years in order to document their experiences and reactions. The NVAWS data interviewed a representative sample of the American population at a single point in time and asked about past sexual assaults. Thus, the length of time since the assault varies greatly in the NVAWS data.

CHAPTER TEN

LIMITATIONS

My study has made important contributions to our understanding of mental health correlates of sexual assault, especially in that it is one of the few to explicitly examine male victims. However, there are limitations to the data and the results. One of the most important is that I could not determine the causal order of sexual assault and mental health measures.

This leads me to a limitation with this study—that of causality. Although other studies have shown causal relationships between sexual assault and depression and alcohol abuse, I was not able to prove causality with this analysis. My NVAWS data does not directly relate the outcomes of depression and alcohol abuse with the sexual assault. The questions concerning depression and alcohol consumption do not attempt to connect the onset of these reactions to any specific event. The outcomes could be from another trauma, or other factors in the respondent's life. They may have had these problems even before they were sexually assaulted. Future research may be able to track respondents longitudinally in order to see how their depression and alcohol related behaviors change over time, especially if they are sexually assaulted over the course of the study.

This study also failed to account for the age of the respondent at the time of the assault and the time since the assault. Both of these factors can be strongly relevant to the reactions a victim has to his or her sexual assault. A respondent who has had years to

recover can be at a very different place in regards to mental health at the time of the survey than a person who was assaulted very recently.

Another limitation of this study is that I only used the data referring to the first reported perpetrator, even though 10% of the respondents who have been sexually assaulted were assaulted by more than one perpetrator. The data is also limited to details about the most recent incident of sexual assault by the first selected perpetrator.

Another possible limitation is the way the sexual assault screening questions are asked in the first two administrations of the survey. In these administrations, a person who was a victim of an attempted sexual assault may have answered “yes” to one of the completed questions or responded “no” to all of them because he or she was not given the explicit option of an attempted attack.

Finally, and likely the most obvious of the limitations of this study, is the small sample of victimized men that are available. Future research should attempt to gather more information about the elusive male victim. If research spreads the word that men can be victims, too, then the cultural perceptions of male victims may begin to change. Hopefully, with more widespread knowledge about victims, both male and female, reporting will improve and will allow researchers, politicians, and law enforcement alike, to put a start to the end of this tragic phenomenon.

It is also interesting to note that 22 of the sexually assaulted men missing from the analysis in hypotheses 3 and 4 failed to answer (refused or missing) all of the detailed assault characteristics questions included in the index. It is impossible to know the precise circumstances that produced this pattern, however it is consistent with the

expectation of hegemonic masculinity which dictates that men have a strong status to maintain—a status that is highly interrupted by sexual assault. By refusing to answer questions about the assault, these men may be attempting to avoid admitting their victimization or attempting to forget it altogether. Information like this furthers the complications associated with studying male sexual assault victims. Even when they are willing to admit that they are victims of sexual assault, they are often unwilling to discuss it or to answer detailed questions about it. This makes studying an already small male sample even more difficult

One of the most important goals of future research should be to closely examine the sexual assault experiences of large nationally representative samples of men. With more nationally representative data, for men, conclusions about the male experience can be more accurately made. Although the mostly small, clinical samples that are currently studied are interesting and help further the field, large representative samples can attempt to predict the general male reaction. Future research should also attempt to study differences in male and female victims by examining their experiences and reactions to sexual assault over time through longitudinal studies. They should attempt to control for variables like attempted or completed assault, age at the time of the assault, length of time since the assault, and relationship to the perpetrator. Other research may go on to examine victims' rates of reporting their victimization to the police and how these rates differ by gender.

CHAPTER ELEVEN

CONCLUSION

Not only are there too many victims of sexual assault, the costs that the victims pay are also too high. Victims not only suffer from depression and alcohol abuse, but they also have to pay substantial amounts of money for mental health services and medical care, and suffer lost productivity after the sexual assault. Per sexual assault, this cost can rise to over \$12,500, which is a substantial burden for many (Max et al. 2004). Perhaps with more knowledge of what types of reactions victims might have to sexual assault, policies and programs can be more successfully implemented so that the prevention of negative consequences can be a more realistic goal.

APPENDICES

Appendix A

Explanation for the Waves of the Sexual Assault Screening Questionnaire

There were multiple waves of the NVAWS in order to complete the large number of interviews involved in the process. Wave 1 refers to the version C survey, which was administered to both males and females, totaling 2066 respondents. Wave 2 refers to version D, which was administered to both males and females, totaling 4941 respondents. Wave 3 refers to version E, which was administered to both males and females, totaling 5078 respondents. Wave 4 refers to version F, which was administered to females only and totaled 1660 respondents. Wave 5 refers to version A, which was administered to females only and totaled 500 respondents. Wave 6 refers to version B, which was administered to females only and totaled 501 respondents. Wave 7 refers to the Spanish version of the survey, which was administered to both male and females, totaling 315 respondents. Wave 8 refers to the Callback version, which was administered to both males and females, totaling 939 respondents. The Callback version of the survey was administered when the respondent wanted to think about taking the survey or wanted to confirm its authenticity. Another time was scheduled for the interviewer to call the respondent back in order to complete the interview.

Wave 5 (version A) and wave 6 (version B) were the first replicate samples, which are random subsets of the total sample generally used to test questions before they are asked to the entire sample. In these first two waves of interviews, versions A and B of the sexual assault and stalking questionnaires were administered. Versions A and B were analyzed and revised into a third questionnaire, C, in order to include the most

useable questions for the remaining waves of the project. 500 female respondents were administered version A (wave 5), and 501 female respondents were administered version B (wave 6). The remaining respondents (Waves 1, 2, 3, 4, 7, and 8) were asked version C of the questionnaire. When calculating prevalence estimates for sexual assault, the Center for Policy Research used the data from the Version C questionnaire.

The different versions administered during wave 5 and 6 only affect section F of the survey. Section F is used as a screening questionnaire for incidents of sexual assault. If the respondent reports that he or she has been a victim of sexual assault (section F), then he or she is asked the questions in section J that pertain to the event. For each perpetrator identified in section F, section J is completed. When there are multiple events by the same perpetrator, the respondent is asked to use the most recent incident when answering the questions.

Sections F through I focus on the respondent's lifetime experiences with sexual assault, physical assault, stalking, and threats. If the respondent does not report any victimization in these sections, he or she is taken to the Wrap-Up section of the survey. If he or she reports victimization, the respondent is asked specific questions about the event.

Appendix B

Questions Included in the Final Sexual Assault Screening Questionnaire

The following questions are from the questionnaire that was administered to the majority of the respondents. These are the questions that have been referred to as “Version C.” There is a female questionnaire and a male questionnaire. The first question differs due to the anatomy of the respondent.

Female Questions:

F1: We are particularly interested in learning about violence women experience, either by strangers, friends, relatives or even by husbands and partners. I’m going to ask you some questions about unwanted sexual experiences you may have had either as an adult or as a child. You may find the questions disturbing, but it is important we ask them this way so that everyone is clear about what we mean. Remember the information you are providing is confidential.

Regardless of how long ago it happened has a man or boy ever made you have sex by using force or threatening to harm you or someone close to you? Just so there is no mistake, by sex we mean putting a penis in your vagina.

F2: Has anyone, male or female, ever made you have oral sex by using force or threat of harm? Just so there is no mistake, by oral sex we mean that a man or boy put his penis in your mouth or someone, male or female, penetrated your vagina or anus with their mouth or tongue.

F3: Has anyone ever made you have anal sex by using force or threat of harm? Just so there is no mistake, by anal sex we mean that a man or boy put his penis in your

anus.

F4: Has anyone, male or female, ever put fingers or objects in your vagina or anus against your will by using force or threats?

F5: Has anyone, male or female, ever attempted to make you have vaginal, oral or anal sex against your will, but intercourse or penetration did not occur?

F6: IF F1, F2, F3, F4, OR F5 =1 (RESPONDENT HAS BEEN SEXUALLY ASSAULTED) GO TO F7, ELSE GO TO SECTION G.

Male Questions:

F1: We are particularly interested in learning about violence men experience, either by strangers, friends, relatives or even by wives and partners. I'm going to ask you some questions about unwanted sexual experiences you may have had either as an adult or as a child. You may find the questions disturbing, but it is important we ask them this way so that everyone is clear about what we mean. Remember the information you are providing is confidential.

Regardless of how long ago it happened...

F2: Has anyone, male or female, ever made you have oral sex by using force or threat of harm? Just so there is no mistake, by oral sex we mean that a man or boy put his penis in your mouth or someone, male or female, penetrated your anus with their mouth or tongue.

F3: Has anyone ever made you have anal sex by using force or threat of harm? Just so there is no mistake, by anal sex we mean that a man or boy put his penis in your anus.

F4: Has anyone, male or female, ever put fingers or objects in your anus against your will by using force or threats?

F5: Has anyone, male or female, ever attempted to make you have oral or anal sex against your will, but penetration did not occur?

F6: IF F2, F3, F4, OR F5 =1 (RESPONDENT HAS BEEN SEXUALLY ASSAULTED) GO TO F7, ELSE GO TO SECTION G.

Because only women were administered versions A and B of the survey, the male data are not affected by the different questionnaires. For version A of the survey, there were 92 yes responses to the first question and 71 yes responses to the second question. For version B of the survey, the women answered all of the same questions as those who responded to version C, except for the attempted sexual assault question. The different versions of the sexual assault and stalking questionnaires only affect the screening questions themselves (section F questions 1-6), not the characteristics of the assault (section J).

Appendix C

Explanation for Binary Logistic Regression

Prior work states that a cut off point of greater than 19 on the depression scale is sufficient to conclude the respondent has significant depressive symptoms (Carbone-Lopez et al. 2006; Coker et al. 2005; Coker et al. 2002). According to these works, a respondent that scores 20 or higher has significant depressive symptoms. Using this data, a dichotomous variable is created so that anyone scoring over 19 is considered depressed (with a score of 1) while anyone under this value is considered not depressed (with a score of 0). This variable, BinDep, will be used as a dependent variable in the Binary Logistic regression discussed later.

The CDC defines “heavy drinking” as fifteen or more drinks per week for a man and eight or more drinks per week for a woman (CDC 2014a). Using this data, and the higher cutoff of 15 drinks (so as to have a more conservative analysis), a dichotomous variable is created so that anyone scoring over 14 is considered a heavy drinker (with a score of 1) while anyone under this value is considered not a heavy drinker (with a score of 0). This variable, BinAlc, will be used as a dependent variable in the Binary Logistic regression discussed later.

I ran all of the original models again, this time using Binary Logistic Regression and the dichotomous variables discussed above that were created for both depression and alcohol as the dependent variables. All of the independent variables and controls remained the same as the OLS models. This procedure was completed in order to see if

the differences that may exist in the scale and dichotomous dependent variables made any difference in the analysis.

| Descriptive Statistics for Dichotomous Dependent Variables | | | |
|--|-------|------|----------------|
| Variables: Dependent | Range | Mean | Std. Deviation |
| Binary Depression | 0-1 | .15 | N/A |
| Binary Alcohol | 0-1 | .08 | N/A |

The mean for the dichotomous variable for depression is .15, meaning that 15% of the respondents could be categorized as depressed. The mean for the dichotomous variable for alcohol is .08, meaning that 8% of the respondents could be categorized as heavy drinkers.

| Descriptive Statistics for Dichotomous Dependent Variables by Gender | | | | |
|--|-------|-------------|-----------|------------------------------------|
| Variables: Dependent | Range | Female Mean | Male Mean | Significance of Gender Differences |
| Binary Depression | 0-1 | .18 | .11 | .000 |
| Binary Alcohol | 0-1 | .04 | .13 | .000 |

The mean for the dichotomous variable for depression is .18, meaning that 18% of the respondents could be categorized as depressed. This is slightly higher than the combined male and female sample. The mean for the dichotomous variable for alcohol is .04, meaning that 4% of the respondents could be categorized as heavy drinkers. This statistic is less than that of the combined sample.

The mean for the dichotomous variable for depression is .11, meaning that 11% of the respondents could be categorized as depressed. This is slightly lower than the combined male and female sample. The mean for the dichotomous variable for alcohol is

.13, meaning that 13% of the respondents could be categorized as heavy drinkers. This statistic is higher than that of the combined sample.

I decided to re-run the models for Hypothesis 1 using Binary Logistic Regression and creating dummy variables for both depression and alcohol abuse using the cutoffs I mentioned earlier. The results were similar to the OLS regression results. Female completed sexual assault victims ($B=.898$; Sig. $.000$) and attempted sexual assault victims ($B=.810$; Sig. $.000$) were significantly more likely to be depressed than nonvictims. Male completed sexual assault victims ($B=.801$; Sig. $.000$) were also significantly more likely to be depressed than nonvictims. Male attempted sexual assault victims ($B=.172$; Sig. $.656$) were not significantly different than nonvictims in their depression.

Both female completed ($B=.424$; Sig. $.011$) and attempted sexual assault victims ($B=.803$; Sig. $.004$) were significantly more likely to be classified as heavy drinkers in the past two weeks than nonvictims. Both completed ($B=.045$; Sig. $.852$) and attempted male sexual assault victims ($B=-.508$; Sig. $.239$) did not significantly differ in their likelihood to be heavy drinkers.

I also decided to re-run the models for Hypothesis 2 also using Binary Logistic Regression and creating dummy variables for both depression and alcohol abuse using the cutoffs I mentioned earlier. The results were the same. Completed sexual assault victims ($B=.814$; Sig. $.000$) were significantly more likely to be categorized as depressed than nonvictims when controlling for an interaction with gender. Attempted sexual assault victims ($B=.134$; Sig. $.727$) were not significantly more likely to be depressed

than nonvictims when controlling for an interaction with gender. Both completed (B=.041; Sig. .864) and attempted sexual assault victims (B=-.497; Sig. .249) did not drink significantly more alcohol in the past two weeks than nonvictims when controlling for an interaction with gender. The interaction terms in these models were not significant, meaning gender does not moderate the relationships between completed or attempted assault and depression or alcohol abuse.

After running the Ordinary Least Squares Regression for hypotheses 3 and 4 and finding no significance, I chose to re-run the analysis using Binary Logistic Regression using the cutoff points for depression and heavy drinking mentioned earlier to create binary variables for depression and alcohol abuse. These regressions also were not significant, other than control variables. The output for these regressions can be seen below.

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