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Sexual Assault Severity And Health Outcomes Among African American And Caucasian Victims

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**SEXUAL ASSAULT SEVERITY AND HEALTH OUTCOMES AMONG AFRICAN
AMERICAN AND CAUCASIAN VICTIMS**

by

SHERI E. PEGRAM

THESIS

Submitted to the Graduate School

of Wayne State University,

Detroit, MI

in partial fulfillment of the requirements

for the degree of

MASTER OF ARTS

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MAJOR: COGNITIVE, DEVELOPMENTAL

AND SOCIAL PSYCHOLOGY

Approved By:

Advisor

Date

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DEDICATION

This paper is dedicated to my tremendously supportive and loving parents, Dale and Victoria Pegram. This paper is also dedicated to my partner, Robbin. Thank you for your love and support throughout this process.

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First and foremost, I would like to express my gratitude to my advisor, Dr. Antonia Abbey, for her outstanding supervision, expertise, and support throughout this process. The guidance I have received from you has been invaluable to this project and to my graduate training. I also want to extend my appreciation to the other members of my thesis committee, Dr. Boris Baltes and Dr. Richard Slatcher, for their advice and encouragement. I owe a special thanks to my fellow lab member, Jennifer Pierce. I sincerely appreciate all your advice, enthusiastic support, and comic relief. Your vibrant personality and positivity made the lab a wonderful place to be! Finally, I would like to acknowledge the National Institute of Alcohol Abuse and Alcoholism for funding this study and making this work possible (Grant R01AA011346).

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CHAPTER 1 INTRODUCTION

Sexual assault is a pervasive societal issue, with a myriad of short and long-term health implications for victims. A recent national survey estimates that approximately 1 in 5 women experience a completed or attempted rape and almost half of women will experience some level of sexual victimization in their lifetime (Black et al., 2011). It is common for victims of sexual assault to experience deleterious psychological outcomes, including posttraumatic stress disorder (PTSD) symptoms, depressive symptoms, suicidal ideation, anxiety, and general distress (Campbell, Dworkin, & Cabral, 2009; Hanson, 1990; Koss, Figueredo, & Prince, 2002; Sarkar & Sarkar, 2005; Wadsworth & Records, 2013; Zinzow et al., 2012). Further, many victims suffer a variety of physical health problems (Campbell, Greeson, Bybee, & Raja, 2008; Golding, Cooper, & George, 1997; Plichta, 1992; Ullman & Brecklin, 2003a), and engage in health risk behaviors, such as problematic drinking, illicit drug use, risky sexual behavior, and disordered eating (Dubosc et al., 2012; Littleton, Grills-Taquechel, Buck, Rosman, & Dodd, 2012; Ullman, Filipas, Townsend, & Starzynski, 2005; Ullman, Townsend, Starzynski, & Long, 2006).

Although they share many similarities in their recovery outcomes, African American and Caucasian victims likely differ in their conceptualizations of and responses to sexual assault (Bryant-Davis, Ullman, Tsong, & Gobin, 2011; Neville & Heppner, 1999). African American's experiences with racial discrimination, political marginalization, and social adversity may have a profound and unique impact on their responses to sexual victimization (Abbey, Jacques-Tiura, & Parkhill, 2010; Bryant-Davis, Chung, & Tillman, 2009; Geronimus, Hicken, Keene, & Bound, 2006; Wadsworth

& Records, 2013; Washington, 2001). However, there is a dearth of studies examining similarities and differences in post-assault outcomes based on ethnicity, and these initial findings need further investigation. Furthermore, few studies have examined a moderating role of ethnicity on recovery outcomes. The present study contributes to this gap in the literature by examining similarities and differences in how sexual assault severity impacts mental and physical health for African American and Caucasian women.

Theoretical Framework

Although several theories are discussed in this paper, Neville and Heppner's (1999) culturally inclusive ecological model of sexual assault recovery is broadly used as a theoretical framework. This model, adapted from Bronfenbrenner's (1977) ecological theory, incorporates cultural variables to understand and contextualize differential recovery outcomes for victims. Core to this model is that cultural variables, such as ethnicity, influence every aspect of victims' recovery.

At a macrosystem level, Neville and Heppner (1999) describe societal conceptualizations of sexual assault that perpetuate rape myths. The historical experiences of African American women, including the fact that sexually assaulting African American women was once sanctioned, (Hall, 1983) are likely to have shaped the way society conceptualizes their victimization (Abbey et al., 2010; Neville & Heppner, 1999). At a mesosystem level, interactions with health professionals could impact adjustment differently for African American victims as compared to Caucasian victims. For instance, African American women are likely to report more barriers to seeking formal mental health care, experience more disregard after disclosing their

assault to a formal support provider, and experience more PTSD symptoms when they report high levels of disregard from a formal support provider (El-Khoury et al., 2004; Jacques-Tiura, Tkatch, Abbey, & Wegner, 2010).

Ethnicity also plays a large role at the individual/ microsystem level. For instance, El-Khoury et al. (2004) found that African American women were less likely than Caucasian women to utilize mental health resources following victimization. Researchers have posited that this is due to cultural differences in the importance of self-reliance (El-Khoury et al., 2004; Washington, 2001) and emphasis on maintaining a “Strong Black Woman” expectation (West, 2006, p. 6). African American and Caucasian women also may have notable differences in their attributions about why they were assaulted and their coping efforts following victimization (Neville & Heppner, 1999; Neville, Heppner, Spanierman, & Clark, 2004). Thus, it is important to consider the role of ethnicity as it relates to post-assault processes and recovery outcomes.

Prevalence of Sexual Assault Victimization

The pervasiveness with which sexual assault occurs is well documented (Black et al., 2011; Koss, Gidycz, & Wisniewski, 1987; Planty, Langton, Krebs, Berzofsky, & Smiley-McDonald, 2013). However, prevalence estimates depend on the method of assessing victimization, such as the mode of data collection, item wording, frame of reference, and definitions (Abbey, Parkhill, & Koss, 2005; Koss et al., 2007; Kilpatrick, 2004; Planty, et al., 2013). National surveys, such as the National Crime Victimization Survey (NCVS), tend to produce more conservative estimates of victimization. The NCVS (Planty et al., 2013) defines rape as:

Rape is the unlawful penetration of a person against the will of the victim, with use or threatened use of force, or attempting such an act. Rape includes psychological coercion and physical force, and forced sexual intercourse means vaginal, anal, or oral penetration by the offender. Rape also includes incidents where penetration is from a foreign object, victimizations against male and female victims, and both heterosexual and homosexual rape. Attempted rape includes threats of rape (p. 2).

The NCVS (Planty et al., 2013) defines sexual assault as:

Sexual assault is defined across a wide range of victimizations, separate from rape or attempted rape. These crimes include attacks or attempted attacks generally involving unwanted sexual contact between a victim and offender.

Sexual assault may or may not involve force and includes grabbing or fondling.

Sexual assault also includes verbal threats (p. 2).

Using the aforementioned criteria, the NCVS found that there were 270,000 rapes and sexual assaults in the year 2010. Further, between 1995 and 2010, the NCVS estimates that 1.1 per 1,000 women were raped or sexually assaulted (Planky et al., 2013). These estimates are extremely low when compared to studies utilizing self-report surveys with behaviorally specific items assessing victimization. For instance, in a landmark study with a national collegiate sample, Koss et al. (1987) found that over half of their women experienced some type of sexual victimization since age 14. In addition, 27.5% of women experienced a rape or attempted rape since age 14, and 8.3% of women experienced a rape or attempted rape during a 6-month period. Other studies have found similarly high prevalence rates of lifetime sexual assault

victimization, with estimates ranging from 38% to 75% (Abbey, Parkhill, & Koss, 2005; Abbey, Ross, McDuffie, & McAuslan, 1996; Gidycz, Coble, Latham, & Layman, 1993; Humphrey & White, 2000; Kalof, 2000; Testa, VanZile-Tamsen, Livingston, & Koss, 2004). African American and Caucasian women experience similarly high rates of sexual assault across a variety of college (Gross et al., 2006), community (Wyatt, 1992), and national samples (Tjaden & Thoennes, 2006).

Severity of the Assault

For many victims, sexual assault has a long-term impact on mental health. Studies have found that depressive and PTSD symptoms can persist for years, and in some cases, decades following the assault (Kilpatrick, Saunders, Veronen, Best, & Von, 1987; Mackey et al., 1992; Najdowski & Ullman, 2009b). Although many victims experience psychological distress for years after their assault, it is not always the case. For instance, Kilpatrick, Resick, and Veronen (1981) reported that a quarter of rape victims, recruited from a local hospital, had virtually no psychological symptoms on a battery of distress measures one year after their assault. Severity of the assault has been examined to understand why some victims experience more distress than others. Severity has been operationalized in many different ways. For instance, the Sexual Experiences Survey (Koss, Gidycz, & Wisniewski, 1987) measures types of unwanted sexual experiences in increasing severity as follows: sexual contact, sexual coercion, attempted rape, and completed rape. Using this coding scheme, sexual assault severity is associated with poorer recovery outcomes (Ullman, Townsend, Filipas, & Starzynski, 2007).

Severity has also been conceptualized as including characteristics of the assault in relation to distress. Specifically, the perpetrator's degree of violence/ force, victim's relationship to the perpetrator, presence of a weapon, and victim's injuries have been found to predict depressive and PTSD symptoms (Bownes, O'Gorman, & Sayers, 1991; Sales, Baum, & Shore, 1984; Gidycz & Koss, 1991; Kilpatrick et al., 1989; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Ullman & Filipas, 2001). However, many studies have found null relationships between characteristics of the assault and distress (Atkeson, Calhoun, Resick, & Ellis, 1982; Frank, Turner, & Stewart, 1980; Kilpatrick, Veronen, & Best, 1984; Sales, Baum, & Shore, 1984; Ullman & Filipas, 2001). In their meta-analysis, Weaver and Clum (1995) reported that objective aspects of the assault, such as the presence of a weapon and physical injury, have small effect sizes in predicting psychological distress. In addition, they found that the perpetrator's degree of force had a moderate effect size in predicting distress.

Weaver and Clum (1995) concluded that subjective severity, such as perceived life threat, may contribute more to the development of psychological distress. In fact, they found that variables coded as subjective severity factors (i.e., general appraisal, perceived life threat, self-blame, perceived controllability, and perceived safety) contributed twice as much to the prediction of distress than did objective factors. Other studies examining subjective severity factors, such as perceived life threat, perceived dangerousness, and general appraisals, also have been found to predict distress among sexual assault victims (Ullman & Filipas, 2001; Ullman, Filipas, Townsend, & Starzynski, 2007; Ullman et al., 2007). Thus, subjective severity indicators were assessed in this study.

Sexual Assault and PTSD Symptoms

PTSD symptoms are common after sexual assault (Au, Dickstein, Comer, Salters-Pedneault, & Litz, 2013; Clum, Calhoun, & Kimberling, 2000; Ullman & Filipas, 2001; Ullman et al., 2007; Ullman et al., 2007; Zoellner, Goodwin, & Foa, 2000). Characteristic symptoms of posttraumatic stress include hypervigilance, sleep disturbances, re-experiencing the event through flashbacks, avoiding reminders of the incident, and psychological numbing (American Psychiatric Association, 2013; Stein, Walker, Hazen, & Forde, 1997). Although PTSD symptoms peak immediately after the assault (94% in Rothbaum, Foam Murdock, Riggs, & Walsh, 1992), it is not uncommon for symptoms to linger for months to years (Au et al., 2013; Steenkamp, Dickstein, Salters-Pedneault, Hofmann, & Litz, 2012; Najdowski & Ullman, 2009b).

Lifetime prevalence rates for PTSD among sexual assault victims range from 30 to 65% (Clum et al., 2000; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kilpatrick, Edmunds, & Seymour, 1992; Kilpatrick et al., 1987; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Rothbaum et al., 1992; Zoellner et al., 2000), and rates for current PTSD are around 12 to 16% (Kilpatrick et al., 1987; Resnick et al., 1993). In a study of women who volunteered to talk about their sexual assault experience, PTSD symptoms persisted for most women long after the assault (Najdowski & Ullman, 2009b). Although victims were 13 years post-assault on average, 67% met diagnostic criteria for PTSD.

Few studies have examined ethnic differences in PTSD symptom severity, although research that has compared ethnic groups tends to find similar levels of PTSD symptoms (Elliot, Mok, & Briere, 2004; McFarlane et al., 2005; Ullman & Brecklin, 2002;

Ullman, Filipas, Townsend & Starzynski, 2006). However, a recent longitudinal study with a community sample found that African American sexual assault victims reported more PTSD symptoms and were more likely to meet diagnostic criteria for PTSD than were Caucasian victims (Littleton & Ullman, 2013). There is some, albeit preliminary, evidence to suggest that the relationship between assault severity and PTSD symptoms may vary based on ethnicity. For instance, Ullman and Filipas (2001) did not find differences in PTSD symptoms between African American and Caucasian women in a community sample of sexual assault victims. However, they did find a moderating effect of ethnicity on the relationship between perceived severity and PTSD symptom severity. Specifically, greater perceptions of life threat during the assault predicted higher levels of PTSD symptoms for Caucasian women; whereas African American women were just as likely to experience PTSD symptoms regardless of perceived life threat. The reason for this relationship is unclear; however, the study also found that African American victims received more stigmatizing responses from others. Accordingly, ethnic differences in post-assault sequelae, such as disclosure experiences, could explain why African American victims experienced similar levels of PTSD symptoms regardless of assault severity. Although preliminary, this finding suggests that the role of ethnicity in sexual assault recovery is complex. One goal of the current study is to replicate and extend this finding.

Sexual Assault and Depressive Symptoms

Compared to nonvictims, victims of sexual assault are at a higher risk for experiencing depressive symptoms and meeting clinical criteria for depression (Acierno et al., 2002; Campbell et al., 2009; Clum et al., 2000; Dickinson, deGruy, Dickinson, &

Candib, 1999; Golding, 1996a; Kilpatrick et al., 1987). In a longitudinal study with a national random sample of women, sexual assault victimization significantly increased the odds of meeting diagnostic criteria for major depressive disorder (Acierno et al., 2002). Specifically, younger survivors were almost three times more likely to have current depression, and older survivors were approximately four times more likely to have current depression. Similarly, other studies have found that sexual assault significantly increases the risk for depression with odds ratios ranging from 3 (Kimberling et al., 2010) to 5 (Plichta & Falik, 2001). Frank and Stewart (1984) found that 43% of rape victims, who were recruited through rape advocacy centers, met diagnostic criteria for major depression. Forty-four percent of the depressed participants were moderately depressed and 56% were severely depressed in the month following the assault. Studies have found that depressive symptoms can persist for years, and even decades after the assault (Kilpatrick et al., 1987; Mackey et al., 1992). In Mackey et al. (1992), 60% of rape victims reported some level of depressive symptoms and 40% were moderately to severely depressed approximately 8 years post-assault.

Few studies have examined the extent to which victims' depressive symptoms vary according to ethnicity, and findings are mixed. Some research suggests that, compared to African American victims, Caucasian victims are more likely to experience depressive symptoms (Caetano & Cunradi, 2003). Kaukinen and DeMaris (2005) also found that Caucasian victims experience more depressive symptoms as compared to African American victims; however there were no significant differences after controlling for the type of victimization. Other studies have not found ethnic differences in

depressive symptoms (Littleton et al., 2012; Plichta & Falik, 2001; Ullman & Filipas, 2005). These studies have utilized diverse samples of victims, including college students (Littleton et al., 2012; Ullman & Filipas, 2005), probability samples (Cateano & Cunradi, 2003), and large national surveys (Kaukinen & DeMaris, 2005; Plichta & Falik, 2001). Clearly, more research is needed to determine if ethnic differences in depression exist for victims of sexual assault.

The Mitigating Role of Perceived Social Support

Having a strong sense of social support is an important resiliency factor in the aftermath of a traumatic event (Brewin, Andrews, & Valentine, 2000; Ullman, 1999a, for reviews). Much of the research on sexual assault victims' social support has focused on others' social responses to disclosure of the event (Ahrens, Cabral, & Abeling, 2009; Borja, Callahan, & Long, 2006; Jacques-Tiura et al., 2010; Littleton & Breitkopf, 2006; Orchowski & Gidycz, 2012; Ullman, 1999b, Ullman & Najdowski, 2011; Ullman et al., 2007). It is common for victims who disclose their experience to receive both positive and negative social reactions (Ullman, 1999b). Victims who receive positive social reactions from disclosure sources report greater posttraumatic growth (Borja et al., 2006), and fewer depressive and posttraumatic stress symptoms (Ullman & Filipas, 2001). Negative social reactions, on the other hand, can exacerbate victims' feelings of distress and can be particularly damaging to recovery. Negative social reactions include responses that are blaming, disbelieving, and stigmatizing (Ullman, 1999b). Research shows that these responses are associated with greater psychological distress (Jacques-Tiura et al., 2010; Ullman & Filipas, 2001; Ullman et al., 2007),

avoidance coping (Ullman & Najdowski, 2011; Ullman et al., 2007), and self-blame (Ullman et al., 2007).

Perceived social support also plays a critical role in the aftermath of sexual assault. The construct of perceived social support is distinct from received social support in that it involves the perception that help is available or will be available when needed (Zimet, Dahlem, Zimet, & Farley, 1988). Compared to the latter, perceived social support has been found to be superior in predicting general well-being (Haber, Cohen, Lucas, & Baltes, 2007) as well as recovery following a traumatic event (Kaniasty & Norris, 1992; Norris & Kaniasty, 1996). For instance, in a community sample of violent crime victims, perceived support was related to fewer symptoms of depression, anxiety, fear, and hostility; whereas received social support was not related to psychological symptoms (Kaniasty & Norris, 1992).

According to the buffering hypothesis, perceived social support has a positive impact on well-being because it attenuates the influence of stressful events (Cohen & Wills, 1985; Yap & Devilly, 2004). Cohen and Wills (1985) posit there are two points in which social support can buffer stress. First, after experiencing a stressful event, social support may thwart or reduce stress appraisals. Second, having perceived social support after appraising an event as stressful can prevent pathological outcomes. Consistent with this hypothesis, Scarpa, Haden, and Hurley (2006) found that high levels of perceived social support from friends mitigated PTSD symptom severity among a sample of community violence victims. Studies utilizing samples of adult and child sexual assault victims also have found that perceived social support buffers the development of psychological symptoms associated with PTSD and depression

(Hyman, Gold, & Cott, 2003; Schumm, Briggs-Phillips, & Hobfoll, 2006). In a longitudinal study following rape victims 4 to 6 years post-assault, availability of social support predicted self-rated recovery. Less than half of victims without perceived availability of social support were recovered at the follow-up interview, whereas 80% of those with perceived availability of social support were recovered (Burgess & Holmstrom, 1978).

Compared to Caucasian victims, African Americans are less likely to disclose their experience to informal and formal support providers (Wyatt, 2002). In a qualitative study of African American victims' disclosure patterns, several themes for nondisclosure emerged, including internalization of the "strong Black woman and weak White woman dichotomy" (Washington, 2001, p. 1265). One participant stated:

We Black women believe we can cope. [But] we can't always cope, and sometimes when we're not coping, we're ashamed of that.... It's almost like it's seen as a luxury to go into a group setting and talk about sexual violence.... And I think it's kind of something we use to kind of bash each other over the head with, like seeing it as a luxury, then saying it's a White woman's thing, and [thereby] not taking the time to get what we need (p. 1271-1272).

Furthermore, when African American women do disclose their victimization, they are less likely to receive supportive social reactions than are Caucasian women (Campbell, Ahrens, Sefl, Wasco, & Barnes, 2001; Wyatt, 2002). This may be due to society's negative stereotypes of African American women, such as the "Jezebel" image (Neville & Pugh, 1997). In support of this idea, an experimental study found that

participants viewed rape as being less serious if the victim was African American than Caucasian (Foley, Evancic, Karnik, King, & Parks, 1995).

Sexual Assault and Physical Health Symptoms

The relationship between sexual assault victimization and physical health outcomes is well documented across self-report surveys and records-based assessments (Campbell et al., 2008; Walker et al., 1999). Compared to nonvictims, women with a history of sexual assault victimization have poorer perceptions of health, more self-reported health complaints, greater utilization of primary and emergency medical services, higher median medical bill costs, more chronic health conditions, and higher mortality rates (Demaris & Kaukinen, 2005; Eadie, Runtz, & Spencer-Rodgers, 2008; Friedman & Schnurr, 1995; Golding, 1994; Golding, 1999b; Golding et al., 1997; Kimberling & Calhoun, 1994; Plichta & Falik, 2001; Runtz, 2002; Schnurr & Green, 2004; Ullman & Brecklin, 2003; Walker et al., 1999). Moreover, a study analyzing seven population surveys found that women with a history of sexual assault were 1.63 times more likely to have poor subjective health than were nonassaulted women (Golding, Cooper, & George, 1997).

Sexual assault has been linked to specific health symptoms, such as gastrointestinal issues (e.g., stomach pain, constipation, nausea), pain, fatigue, gynecological problems (e.g., painful menstruation, irregular menstrual periods, excessive menstrual bleeding, missed at least 2 periods, vomiting through pregnancy, genital burning, sexual indifference, pain during intercourse, and lack of sexual pleasure), and chronic headaches (Golding, 1999a; Golding, 1999b; Leserman, 2005; McCauley et al. 1997; Rimsa, Berg, & Locke, 1988; Stein et al., 2004). In addition,

victims are more likely than nonvictims to suffer from chronic medical conditions, such as irritable bowel syndrome, fibromyalgia, diabetes, ulcers, asthma attacks, and arthritis (Drossman, Talley, Leserman, Olden, & Barreiro, 1995; Golding, 1999b; Kimberling & Calhoun, 1994; Walker et al., 1997). Researchers estimate that approximately 50-67% of women with fibromyalgia (reviewed by Walker et al., 1997) and 30-64% of women with gastrointestinal disorders have histories of sexual abuse (reviewed by Drossman et al., 1995).

Research findings suggest that psychological distress, such as PTSD symptoms and depressive symptoms, may mediate the relationship between sexual assault and physical health symptoms (Campbell et al., 2008; Eadie et al., 2008; Koss et al., 2002; Sakar & Sakar, 2005; Tansill, Edwards, Kearns, Gidycz, & Calhoun, 2012; Ullman & Brecklin, 2003; Zinzow et al., 2011; Zoellner, Goodwin, & Foa, 2000). In Zinzow et al. (2011), a history of PTSD or clinical depression significantly increased odds of self-rated poor health among a national college sample of sexual assault victims. There are many pathways through which psychological distress affects health (Schnurr & Green, 2004). Thus, high levels of psychological distress may distinguish sexual assault victims with more severe health symptoms as compared to those with less severe symptoms. Following victimization, the stress response can adversely affect the HPA axis, subsequently compromising immune and inflammatory responses. Chronic inflammation, in particular, can manifest itself in pain-related health problems (Blanchard, 1990; Campbell et al., 2008; Koss & Heslet, 1992; McFarlane, Atkchison, Rafalowicz, & Papay, 1994).

According to the weathering hypothesis (Geronimus, 1992), African Americans are disproportionately more likely to experience physical health problems because they must persistently cope with social, political, and economic adversity. The cumulative impact of these stressors is hypothesized to greatly affect physiological mechanisms associated with health (Geronimus et al., 2006; Schulz et al., 2000). Researchers have found that African Americans have higher physiological indicators of chronic stress than do Caucasians, even after controlling for socioeconomic status (Chyu & Upchurch, 2011; Geronimus et al., 2006). Implications of the weathering hypothesis are that African American women may be particularly vulnerable to developing physical health problems following sexual assault; however this has not yet been studied.

Sexual Assault and Drinking Problems

A burgeoning body of research has found that drinking problems are common among victims of sexual assault (Gidycz, Hanson, & Layman, 1995; Lown, Nayak, Korcha, & Greenfield, 2011; Marx, Nichols-Anderson, Messman-Moore, Miranda, & Porter, 2000; Ullman et al., 2006). Importantly, the relationship between sexual assault victimization and drinking problems has been demonstrated in cross-sectional studies (Ullman et al., 2005), studies utilizing national samples (Lown et al., 2011), and prospective studies (Kaysen, Neighbors, Martel, Fossos, & Larimer, 2006; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Lindgren, Neighbors, Blayney, Mullins, & Kaysen, 2012; Najdowski & Ullman, 2009a). Research has found that approximately 13-49% of sexual assault victims develop alcohol dependency, and 28-61% of victims use other illicit substances (Campbell et al., 2009; Frank & Anderson, 1987; Ullman & Brecklin, 2002). Furthermore, a two-year longitudinal study found that women who

were victimized during the course of the study were almost three times more likely to meet diagnostic criteria for alcohol abuse after the victimization than were nonvictimized women (Kilpatrick et al., 1997).

Theoretical explanations for the relationship between sexual assault victimization and drinking problems include the tension reduction model (Conger, 1956), the motivation model of alcohol use (Cooper, Frone, Russell, & Mudar, 1995), and the self-medication hypothesis (Cappell & Greeley, 1987). These models posit that traumatized individuals may use alcohol as a coping mechanism to reduce negative affect.

Research generally supports these models. For instance, in a sample of women with comorbid PTSD and substance use disorders, substance use disorders were subsequent to PTSD in a majority of cases (65-84% in Kessler et al., 1995). Also in support of these models, multiple studies have found that drinking to cope with negative emotions mediates the relationship between psychological symptoms and drinking problems (Grayson & Nolen-Hoeksema, 2005; Lindgren et al., 2012; Ullman et al., 2005).

Compared to African Americans, Caucasians have higher rates of general alcohol consumption and hazardous drinking (Biafora, Warheit, Vega, & Gil, 1994; Clements, 1999; Randolph, Torres, Gore-Felton, Lloyd, & McGarvey, 2009; Wechsler et al., 2002). Moreover, Caucasian victims of sexual assault are more likely to have consumed alcohol prior to the incident (Abbey et al., 1996; Boykins et al., 2010; Littleton et al., 2012). However, findings on ethnic differences in hazardous drinking among sexual assault victims are mixed. Although African Americans have lower drinking patterns in general, some research suggests that they may be more likely to have

drinking problems and substance abuse following sexual violence (Bryant-Davis et al., 2009; Kaukinen & DeMaris, 2005; Bell-Jenkins, 1991). Conversely, other studies have found that African American sexual assault victims are at a lower risk of engaging in hazardous alcohol use and heavy episodic drinking (Kaukinen & DeMaris, 2009; Littleton et al., 2012). These contradictory findings suggest there may be complex ethnic differences in risk pathways to problematic alcohol use. For instance, in Littleton and Ullman's (2013) sample of sexual assault victims, there were no significant ethnic differences in hazardous drinking. However, ethnicity moderated the relationship between PTSD symptoms and hazardous drinking such that PTSD symptoms predicted hazardous drinking for African Americans, but not for Caucasians. This pattern may reflect cultural differences in coping motives. For instance, perhaps African Americans are more likely to rely on avoidance coping strategies, such as drinking to cope. More research examining drinking patterns among African American victims of sexual assault is needed to elucidate these contradictory findings.

CHAPTER 2 THE PRESENT STUDY: GOALS AND HYPOTHESES

The present study cross-sectionally examines how sexual assault severity affects self-reported health outcomes for African American and Caucasian women. Based on the literature referenced in previous sections, general hypotheses are described and then the conceptual model.

There are a variety of subjective and objective characteristics of the sexual assault that affect women's perceptions of severity, thus it is important to look at multiple severity characteristics. However, to date, no studies to my knowledge have put together an index of severity variables associated with victims' recovery.

Hypothesis 1: It is expected that severity will be a unidimensional construct comprised of a combination of objective (e.g., injuries) and subjective (e.g., perceived seriousness) characteristics of the incident.

Satisfaction with social support has been shown to buffer the relationship between sexual assault severity and mental health outcomes (Cohen & Wills, 1985; Ullman, 1999b).

Hypothesis 2(a) and 2(b): Consistent with the stress buffering model, it is hypothesized that perceived social support will moderate the relationship between (a) sexual assault severity and PTSD symptoms, and (b) sexual assault severity and depressive symptoms. Specifically, sexual assault severity is expected to have a strong, positive, linear relationship with PTSD symptoms and depressive symptoms among victims with lower perceived social support. Those with higher perceived social support, however, are expected to have an attenuated positive, linear relationship between severity and symptoms.

Prior research indicates that sexual assault severity is predictive of PTSD symptoms and depressive symptoms (Ullman et al., 2007; Gidycz & Koss, 1991).

Hypothesis 3(a) and 3(b): Consistent with the literature, more severe sexual assaults are hypothesized to predict more severe (a) PTSD symptoms and (b) depressive symptoms. Figure 1 provides a conceptual model of the hypotheses below.

Psychological distress has been found to increase sexual assault victims' likelihood of developing physical health problems (Schnurr & Green, 2004; Zinzow et al., 2011).

Hypothesis 4(a) and 4(b): Consistent with prior research, greater PTSD symptoms are expected to predict (a) more physical health symptoms. In addition, (b) more depressive symptoms are expected to predict more physical health symptoms.

According to theoretical models, such as the tension reduction model (Conger, 1956), the motivation model of alcohol use (Cooper, Frone, Russell, & Mudar, 1995), and the self-medication hypothesis (Cappell & Greeley, 1987), individuals may use alcohol as a coping mechanism to reduce psychological distress.

Hypothesis 5(a) and 5(b): Based on the aforementioned theoretical models, it is expected that (a) PTSD symptoms and (b) depressive symptoms will predict greater self-reported drinking problems.

Researchers have found that sexual assault severity can lead to a range of

health problems, including physical health symptoms and drinking problems, via psychological distress (Campbell et al., 2008; Cappell & Greeley, 1987; Eadie et al., 2008). I expect to replicate these findings (Figure 1).

Hypothesis 6(a) and 6(b): (a) PTSD symptoms and (b) depressive symptoms are hypothesized to mediate the relationship between sexual assault severity and physical health symptoms.

Hypothesis 7(a) and 7(b): (a) PTSD symptoms and (b) depressive symptoms are hypothesized to mediate the relationship between sexual assault severity and drinking problems.

Finally, I hypothesize that ethnicity moderates the effects of sexual assault severity on mental health, and the effects of mental health on physical health symptoms and drinking problems. Because limited research has examined moderating effects of ethnicity on the sexual assault recovery outcomes, these hypotheses are largely exploratory (see Figure 1).

Hypothesis 8(a): I expect to partially replicate Ullman and Filipas' (2001) finding that ethnicity moderates the relationship between sexual assault severity and PTSD symptoms. Accordingly, it is expected that there will be a stronger relationship between sexual assault severity and PTSD symptoms for African American victims as compared to Caucasian victims.

8(b) and 8(c): (b) The relationship between PTSD symptoms and physical health symptoms is expected to be stronger for African American victims. In addition, (c) the relationship between depressive symptoms and physical health symptoms

is expected to be stronger for African American victims as compared to Caucasian victims.

8(d) and 8(e): The present study expects to replicate Littleton and Ullman's (2013) finding that (d) the relationship between PTSD symptoms and drinking problems will be stronger for African American victims as compared to Caucasian victims. Similarly, it is expected that (e) the relationship between depressive symptoms and drinking problems will be stronger for African Americans than Caucasians.

CHAPTER 3 METHOD

Participants

The proposed study uses data originally collected by Dr. Antonia Abbey (see Abbey, BeShears, Clinton-Sherrod, & McAuslan, 2004 for a detailed description of the data collection procedures). The original dataset consisted of 272 women. All potential participants were screened to insure they met the following criteria: 1) age 18-49, 2) currently single, 3) dated a man in the last 2 years, and 4) lived in the United States for at least 10 years. Because the purpose of the current study is to examine sexual assault victims' recovery, the sample was restricted to women who experience some form of sexual assault since the age of 14 ($n = 221$). Of these women, 54.8% ($n = 121$) identified as African American and 45.2% ($n = 100$) identified as Caucasian. The mean age of participants was 31.84 years at the time of the study ($SD = 9.64$). Ninety-three percent of participants had at least a high school degree; Sixty-eight percent of participants had at least some college education, including vocational and associate degrees; 12% had bachelor's degree; and 7.7% had a masters or doctoral degree. Participants' median annual household income, measured in \$5,000 increments, was in the \$30,000 to \$35,000 (see Appendix A for demographic questionnaire).

Procedure

Random digit dialing was used by Wayne State University's Center for Urban Studies to identify eligible participants in the metropolitan Detroit area. African Americans were oversampled to achieve approximately half African American and half Caucasian participants. This was done to ensure that there would be enough members of each ethnic group to analyze responses separately. On the telephone, the study was

described to potential participants as focusing on women's positive and negative dating experiences. Eligible participants were scheduled at a location of their choosing, with a female interviewer of the same ethnicity. Most interviews were scheduled at participants' homes; other locations included restaurants, coffee shops, and Wayne State University's campus.

Interviewers were trained extensively at the Center for Urban Studies. Training included administering the survey to participants, answering basic questions about the survey, and dealing with any adverse emotional reactions from participants (although this was not an issue for anyone). Prior to beginning the study, participants reviewed and signed the consent form, which provided more information about the scope of the study; in particular, it indicated that the survey would assess unwanted sexual experiences. The consent form also provided information regarding compensation for participation, confidentiality of the study, and counseling resources. After signing the consent form, participants were instructed on how to answer the survey on a laptop computer. This training included a set of practice questions to familiarize participants with the survey. Upon completion of the practice questions, participants began the survey. The interviewer sat far enough away from the computer screen to ensure their privacy. They monitored participants' progress and periodically asked if everything was okay. It took participants approximately two hours to complete the survey. After the interview, participants were compensated \$50 for their time.

Measures

Demographic information. Demographic information was collected regarding participants' age, ethnicity, socioeconomic status, and education (Appendix A).

Sexual assault victimization. All participants included in this paper experienced at least one type of sexual victimization as assessed by a modified version of the Sexual Experiences Survey (SES; Koss et al., 1987; Appendix B). The modified SES contains 17 behaviorally-specific items and measures an array of sexual assault experiences since age 14, including: forced sexual contact and penetrative sex (i.e., vaginal, anal, and/or oral sex) via various tactics (i.e., verbal coercion, physical force, use of alcohol/substances). The SES is the most frequently used measure of sexual assault; the measure has demonstrated good validity and reliability (Koss et al., 1987). Because all participants in this study experienced at least one sexual assault, for each item, participants indicated the number of times they experienced the event ranging from (0) *never* to (5) *five or more times*. Sample items include: “How many times have you given in to sexual intercourse when you didn’t want to because a man showed his displeasure (for example, sulking, making you feel guilty, swearing, getting angry, threatening to end the relationship) until he got his way?,” “How many times have you had sexual intercourse with a man when you didn’t want to because you were unable to give consent, perhaps because you were drunk or taking drugs at the time, or because you are a heavy sleeper, or because you were unconscious for any reason?,” and “How many times have you given in to sex play (fondling, kissing, or petting but not intercourse) when you didn’t want to because a man threatened or used some degree of physical force (twisting your arm, holding you down, grabbing, choking, pinching, or any way of restraining your movements or physically hurting you) to make you?”

Sexual assault severity. Participants answered a detailed list of questions about one sexual assault incident. If more than one occurred, a computer algorithm

selected one incident based on severity of the assault type (i.e., forced contact, verbal coercion, attempted rape, rape), the woman's perceived severity of the assault, and recency of the assault. Severity of the incident was assessed using a combination of subjective and objective assault characteristics (Appendix C).

The perpetrator's tactics were summed in order to assess *force*. Participants were asked to identify types of pressure or force the perpetrator used, such as "pressure or coercion with words," "use of alcohol to make you more vulnerable," "verbal threats of violence or physical force," "use of extreme violence or physical force," and "use of a weapon or object to hurt you."

Severity also was assessed based on *assault type*, determined by the SES: *forced sexual contact* (lowest severity), *verbally coerced sexual intercourse*, *attempted rape*, and *completed rape* (highest severity; Koss et al., 1987).

Participants were asked to report all *injuries* that resulted from the unwanted sexual activity. Sample injuries include: bruises, black eye(s), vaginal tearing or bleeding, and broken bones. Participants' reported injuries were summed.

To assess *post-assault threat*, participants were given a list of 5 threatening actions the perpetrator may have done after the incident. Participants were asked, "Did any of the following happen right after the unwanted sexual activity occurred? Sample items include: "Did he threaten you after the unwanted sexual activity occurred?," "Did he swear, insult or blame you after the unwanted sexual activity occurred?," and "Did he continue to physically hurt you after the unwanted sexual activity occurred, for example, hitting you, pulling your hair, throwing you down?" Responses were summed.

To assess *immediate negative affect* after the unwanted sexual activity, participants were asked, “After this incident happened, how did you feel about it?” They were provided a checklist of 20 feelings, which were summed to assess immediate negative affect. Sample feeling include: ashamed, disgusted, taken advantage of/ tricked, dirty, embarrassed, degraded, etc.

To assess the extent to which the assault was *considered to be a sexual offense*, participants were asked, “Which number best describes the extent to which you consider what happened to be rape?” and “Which number best describes the extent to which you consider what happened to be a sexual offense?” The highest value from either item was used to assess the extent to which they consider the incident to be a sexual offense or rape. Response options ranged from (1) *Definitely not rape* to (7) *Definitely rape*, and (1) *Definitely not a sexual offense* to (7) *Definitely a sexual offense*.

To assess perceived *seriousness at the time* and *seriousness now*, participants were asked, “Which number best describes how serious this experience was to you at the time?” and “Which number best describes how serious this experience is for you now?” Response options ranged from (1) *not very serious* to (7) *very serious*.

To assess the extent to which the incident *disrupted their relationships with men*, participants were asked, “To what extent did this experience disrupt your relationships with men?” Response options ranged from (1) *Not at all* to (5) *Very much*.

PTSD symptoms. Frequency of posttraumatic stress symptoms was assessed using Davidson’s Trauma Scale (Davidson et al., 1997; Appendix D). Davidson’s Trauma Scale contains 17 items based on symptoms provided in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994).

Participants were instructed to answer the questions about their experiences after the sexual assault that they described in detail. Sample items are: “How frequently have you had painful images, memories, or thoughts of the event?”, “How frequently have you been avoiding doing things or going into situations which remind you about the event?”, and “How frequently have you had distressing dreams of the event?”

Response options included a Likert scale ranging from (1) *not at all* to (5) *all of the time*. Participants’ mean score was computed. This scale demonstrated a high Cronbach’s alpha of .99 in Davidson et al. (1997), and has a Cronbach’s alpha of .95 in the current study.

Depressive symptoms. An abbreviated version of Beck’s Depression Inventory (Appendix E) was used to assess depressive symptoms (BDI; Beck, 1967). A meta-analysis of the BDI’s psychometric properties concluded that the BDI has high internal reliability among both clinical ($\alpha = .86$) and nonclinical samples ($\alpha = .81$; Beck, Steer, & Garbin, 1988). Fourteen of the measure’s original 20 items were used due to time constraints and because the focus was not on determining clinical diagnoses. The measure maintained a high Cronbach’s alpha of .96 in the current study. Participants were instructed to choose one statement in each group which best describes how they have been feeling during the past week, including that day. For example, in one group options are: (0) *I do not feel sad*, (1) *I feel sad*, (2) *I am sad all the time and I can’t snap out of it*, and (3) *I am so sad or unhappy that I can’t stand it*. A composite score was computed by summing all of their responses.

Perceived social support. A modified 5-item version of the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983) was used to assess

perceived social support from female friends (Appendix F). Sample items include: “How satisfied are you with the extent to which you can really count on women friends to console you when you are very upset?” and “How satisfied are you with the extent to which you can really count on women friends to help you feel more relaxed when you are under pressure or tense?”. Response options ranged from (1) *Not at all satisfied* to (5) *Very satisfied*. Participants’ responses were summed and divided by the number of items. The original measure has demonstrated a high Cronbach’s alpha ($\alpha = .97$ in Sarason et al., 1983), and has a high Cronbach’s alpha of .96 in the current study.

Physical health symptoms. The original researchers generated a list of 21 general somatic and gynecological symptoms based on the Somatization subscale of the Hopkins Symptom Checklist (Lipton, Covi, & Shapiro, 1979) as well as commonly reported symptoms by sexual assault victims (Golding, 1994; Golding, 1999a; Golding, 1999b, Golding et al., 1997; Kimberling & Calhoun, 1994; Leserman, 2005; Plichta & Falik, 2001; Runtz, 2002) (Appendix G). Participants were instructed to indicate how much they have been bothered by symptoms during the past week. Examples of symptoms include indigestion or stomach discomfort, headaches, back pain, painful menstrual periods, and pain or discomfort when having sex. Response options were: (0) *not at all*, (1) *mildly, it did not bother me much*, (2) *moderately, it was very unpleasant but I could stand it*, and (3) *severely, I could barely stand it*. Participants’ mean score was computed. This scale has good reliability with a Cronbach’s alpha of .90 in the current study.

Drinking problems. Drinking problems were assessed using Hilton’s (1987) 13-item Problematic Drinking subscale (Appendix H). This measure was selected because

it was originally used in a large NIAAA funded study of American's alcohol consumption, and because items were written for a general sample of adults, not a treatment sample. The measure asks participants to indicate whether or not they experienced the drinking-related problems in the past 12 months. Sample items include: "Once I started drinking it was difficult for me to stop (before I became completely intoxicated)," "Sometimes I have needed a drink so badly that I couldn't think of anything else," and "I stayed intoxicated for several days at a time." Response options were (0) *no* or (1) *yes*, and responses were summed. This scale has shown strong reliability in other studies (Cronbach's alpha of .88 in Abbey, Parkhill, BeShears, Clinton-Sherrod, & Zawacki, 2006), and has a Cronbach's alpha of .77 in the current study.

CHAPTER 4 RESULTS

Preliminary Data Analyses

Because the current study is conducting secondary data analysis, standard data cleaning procedures have already been performed to inspect the data (Tabachnick & Fidell, 2012). Data were screened for large amounts of missing data or long strings of identical data. There was very little missing data so mean substitution was used. Histograms as well as skewness and kurtosis values were examined for normality and outliers. Perceived social support, PTSD symptoms, drinking problems, and health symptoms had significant skew values, and were transformed to achieve normality.

Hypothesis 1: Severity index. As described in the method section, severity of the sexual assault was assessed using a variety of subjective and objective assault and post-assault characteristics, specifically: the perpetrator's force, assault type, sum of injuries, post-assault threat, immediate negative affect, extent to which the incident was considered a sexual offense, seriousness at the time, seriousness now, and disrupted relationships with men. Z-scores were computed so that all variables were on the same scale.

To create an index of sexual assault severity, principal components analysis with varimax rotation was performed. Two components had eigenvalues over 1, and these components accounted for 58.19% of the variance. The variables were inspected; three had high loadings on the second factor, which included objective characteristics of the assault (perpetrator's force, sum of injuries, and post-assault threat). However, as can be seen in Table 1, the variables were generally strongly correlated with one another,

so a second analysis was conducted that restricted extraction of factors to one; this accounted for 43.52% of the variance. All factor loadings had a loading of at least .35. Because there was reasonable support and for the sake of parsimony (Tabachnick & Fidell, 2012), Severity was treated as a single factor solution. The nine severity items had a Cronbach's alpha of .82. Severity items and their factor loadings are provided in Table 2.

Descriptive Statistics

Descriptive information for assault type is provided in Table 3. As can be seen in the table, there were no significant differences in the types of sexual assaults that African Americans and Caucasians experienced ($\chi^2 = .75, p = .86$). Approximately 30% of participants were victims of attempted or completed rape.

Mean Level Differences in Study Variables

A series of one-way ANOVAs was conducted to test for significant group differences in demographic characteristics. As can be seen in the top half of Table 4, these were: income, education, age, and years since the assault. There was a significant group difference in income; Caucasian victims had significantly higher income than African American victims. There were no other significant differences. Thus, income was included as a covariate in all subsequent analyses.

To examine significant differences in study variables between African American and Caucasian victims, a series of one-way ANCOVAs, covarying for income, were conducted. As can be seen in the bottom half of Table 4, significant differences were found for perceived social support and depressive symptoms. Compared to African

Americans, Caucasians reported significantly higher satisfaction with social support and significantly more depressive symptoms. African Americans and Caucasians did not significantly differ in their assault severity, PTSD symptoms, physical health problems, or drinking problems (Table 4).

Bivariate Analyses

Table 5 is a partial correlation matrix, controlling for income, for the entire sample. Severity was significantly positively correlated with all study variables except for drinking problems. Perceived social support was significantly positively correlated with severity, and negatively correlated with PTSD symptoms and depressive symptoms. PTSD symptoms were significantly correlated with all study variables. Depressive symptoms were significantly correlated with all study variables. Physical health symptoms were significantly positively correlated with all study variables except for perceived social support. Drinking problems were significantly positively correlated with PTSD symptoms, depressive symptoms, and physical health symptoms.

Next, partial correlation matrices, controlling for income, were run for African Americans and Caucasians separately. As can be seen in Table 6, among African Americans, severity was significantly positively correlated with PTSD symptoms, depressive symptoms, and physical health symptoms. However, among Caucasians, severity was only significantly correlated with PTSD symptoms. Perceived social support was significantly negatively correlated with depressive symptoms for both African Americans and Caucasians. Further, perceived social support was significantly negatively correlated with drinking problems for Caucasians. For African Americans,

PTSD symptoms were significantly positively correlated with all study variables except for perceived social support. For Caucasians, PTSD symptoms were significantly positively correlated with severity, depressive symptoms, and physical health symptoms. Depressive symptoms were significantly correlated with all study variables for African Americans; whereas depressive symptoms were significantly correlated with perceived social support, PTSD symptoms, and physical health symptoms for Caucasians. Drinking problems were significantly positively correlated with PTSD symptoms, depressive symptoms, and physical health symptoms for African Americans, and were significantly correlated with perceived social support for Caucasians. Finally, among African Americans, physical health symptoms were significantly positively correlated with all study variables except for perceived social support. Among Caucasians, physical health symptoms were significantly positively correlated with PTSD symptoms and depressive symptoms.

Hypotheses 2(a) and 2(b): Perceived Social Support Moderation Analyses

To test Hypothesis 2(a), that perceived social support moderates the relationship between severity and PTSD symptoms, a three-step simultaneous entry hierarchical multiple regression analysis was conducted, controlling for ethnicity and income. The regression analysis can be seen in Table 7. To avoid issues of multicollinearity, severity and social support were centered prior to conducting the analyses (Tabachnick & Fidell, 2012). Ethnicity and income were entered on the first step, severity and social support were entered on the second step, and the interaction between severity and social support was entered on the third step. The overall regression model for the first step

was not statistically significant. The second step was a statistically significant predictor of PTSD symptoms, $F(4, 216) = 32.82, p < .001$. Both severity, $\beta = .59, t = 10.89, p < .001$, and social support, $\beta = -.21, t = -3.79, p < .001$, had significant main effects in predicting PTSD symptoms. The overall regression model for the third step was statistically significant, $F(5, 215) = 26.19, p < .001$. However, the interaction between severity and social support was not a statistically significant predictor of PTSD symptoms.

These procedures also were used to test Hypothesis 2(b), that social support moderates the relationship between severity and depressive symptoms. The regression model can be seen in Table 8. The first step was statistically significant, $F(2, 218) = 7.25, p < .001$. There was a significant main effect for ethnicity, $\beta = .26, t = 3.76, p < .001$, such that Caucasians displayed more depressive symptoms than African Americans. The second step was statistically significant, $F(4, 216) = 8.17, p < .001$. There were significant main effects for severity, $\beta = .17, t = 2.70, p = .01$, and social support, $\beta = -.27, t = -3.45, p = .001$. The overall regression model for the third step was statistically significant, $F(2, 215) = 7.30, p < .001$; however, the interaction term was not a significant predictor of depression.

In sum, these findings do not confirm the hypotheses that social support moderates the relationship between assault severity and PTSD symptoms and assault severity and depressive symptoms. Thus, interactions terms for severity and social support were not included in the path model. Because social support had statistically significant main effects for PTSD symptoms and depressive symptoms, the theorized

path model was revised to incorporate main effects of social support on PTSD symptoms and depressive symptoms. The revised model can be seen in Figure 2.

Formation of Latent Constructs for Path Model

Latent constructs were formed using total aggregation with reliability correction (Williams & O'Boyle, 2008). Specifically, the sum or average of each measure was used as a single indicator of the latent variable. In the path model, theta-epsilon values were computed using the formula $(1 - \text{reliability})\sigma_s^2$, and lambda values were set to 1.

Structural Equation Model Predicting Sexual Assault Victims' Health Outcomes

Model identification. To examine the hypothesized model (Figure 2), path analyses were conducted using LISREL 8.80 with maximum likelihood method of estimation. Partial correlations, controlling for income, and standard deviations were entered into LISREL to perform analyses. The number of estimated parameters did not exceed the degrees of freedom, thus the model can achieve identification (Rex & Kline, 2011).

Model fit evaluation. Goodness of fit indices were evaluated to assess model fit. Global fit indices that were examined include: standardized root mean square residual (SRMSR), root mean square error of approximation (RMSEA), and comparative fit index (CFI). SRMSR and RMSEA values of less than .05 are considered to indicate good model fit. Values between .05 and .08 indicate adequate fit. CFI values higher than .95 indicate good fit and scores between .90 and .95 indicate adequate fit (Rex & Kline, 2011).

Hypotheses 3-7: Mediation model with the overall sample. To test Hypotheses 3-7, the hypothesized mediation model was conducted (Figure 2). The proposed model evaluated if the relationships between sexual assault severity and health outcomes, and perceived social support and health outcomes, are mediated by mental health symptoms. This model allowed the errors of severity and social support to correlate, and it allowed the errors of PTSD symptoms and depressive symptoms to correlate. SRMSR was .04, RMSEA was .00, and CFI was 1.00. These values indicate that the model has excellent fit. The mediational model is provided in Figure 3.

Figure 4 is a revised mediation model that trimmed nonsignificant paths for both African Americans and Caucasians. The only path that was nonsignificant for both groups was the path from depressive symptoms to drinking problems, thus this path was removed for Model 2. The model still indicated good fit (SRMSR = .05, RMSEA = .03, and CFI = .99). Overall, the significance of path coefficients was generally consistent with hypotheses. Increased severity was associated with increased PTSD symptoms ($r = .68, p < .001$) and increased depressive symptoms ($r = .21, p < .05$). Increased perceived social support was negatively associated with PTSD symptoms ($r = -.25, p < .001$); however, perceived social support was unrelated to depressive symptoms ($r = -.18, p > .05$). PTSD symptoms were unrelated to drinking problems ($r = .19, p > .05$); however, they were positively associated with physical health symptoms ($r = .25, p < .05$). Increased depressive symptoms were associated with increased physical health symptoms ($r = .32, p < .01$).

Direct, indirect, and total effects can be seen in Table 9. Assault severity was indirectly related to physical health symptoms through PTSD symptoms and depressive symptoms among the full sample (indirect effect = .24, $p < .05$). The same pattern was found for African Americans (indirect effect = .30, $p < .05$); however there was not a significant indirect effect between severity and physical health symptoms for Caucasians. In addition, perceived social support was indirectly related to physical health problems through PTSD symptoms and depressive symptoms (indirect effect = -.12, $p < .05$).

Severity was not indirectly related to drinking problems through PTSD symptoms and depressive symptoms among the full sample. However, there was a significant indirect effect for African Americans (indirect effect = .20, $p < .05$). Perceived social support was not indirectly related to drinking problems through PTSD symptoms and depressive symptoms among the full sample or Caucasians; however, there was a significant indirect effect for African Americans (indirect effect = -.07, $p < .05$).

Hypothesis 8: Multi-group comparison analysis. To test Hypotheses 8(a)-8(e) and compare the (in)equality of parameters for African American and Caucasian victims, a multi-group analysis was conducted. The fully constrained model assumed no differences between the groups, whereas the unconstrained model allowed for differences. A chi-square difference test was performed to determine which model to retain. Results of the chi-square difference test indicated that the groups are different at the model level ($\chi^2 = 20.32$, $df = 9$, $p = .02$), thus providing support to retain the unconstrained model.

Because there was evidence for moderation at the path level, separate models for the two groups were compared, and Fischer z-scores were calculated to determine which paths significantly differ across groups. This information can be seen in Table 10 as well as Figure 5. The overall models for both African Americans (SRMSR = .05, RMSEA = .06, and CFI = .99) and Caucasians (SRMSR = .06, RMSEA = .07, and CFI = .95) indicated adequate model fit. The path from severity to PTSD symptoms was statistically significant for African Americans ($r = .67, p < .001$) and Caucasians ($r = .70, p < .001$), and the path was not significantly different between groups. The path from severity to depressive symptoms was significantly related for African Americans ($r = .40, p < .001$), but not for Caucasians ($r = .05, p > .05$). The difference between the groups was statistically significant (Fischer's $z = 2.73, p < .001$). The path from social support to PTSD symptoms was significant for both African Americans ($r = -.23, p < .01$) and Caucasians ($r = -.26, p < .01$), and the groups were not significantly different. Similarly, the path from social support to depressive symptoms was significant for African Americans ($r = -.25, p < .01$) and Caucasians ($r = -.27, p < .01$), and the groups were not significantly different. Although the path from PTSD symptoms to physical health symptoms was statistically significant for the overall sample, it did not reach significance for either group (African Americans: $r = .21, p > .05$; Caucasians: $r = .18, p > .05$), and the groups were not significantly different. The path from PTSD symptoms to drinking problems was significant for African Americans ($r = .30, p < .01$), but not for Caucasians ($r = .02, p > .05$). Moreover, this path was significantly different between groups (Fischer's $z = 2.11, p < .05$). Finally, the path from depressive symptoms to physical

health symptoms was statistically significant for both groups (African Americans: $r = .39$, $p < .001$; Caucasians: $r = .34$, $p < .01$), and the groups were not significantly different.

CHAPTER 5 DISCUSSION

In this community sample of sexual assault victims, their current perceptions of the severity of the assault was associated with their current PTSD and depressive symptoms, which in turn were associated with their current drinking problems and physical health symptoms. These associations were remarkably similar for African American and Caucasian women, with a few important differences described below.

One goal of the current study was to create an index of subjective and objective characteristics of the sexual assault that affect women's perceptions of severity. It was hypothesized that severity would be a unidimensional construct; however there was some evidence for a two factor structure (one factor with objective characteristics and the other with subjective characteristics). Because there was reasonable support for a one factor structure, it was used for the sake of parsimony. However, future studies should explore the differential impact of objective and subjective severity factors on recovery outcomes.

Contrary to Hypothesis 2 and the stress buffering model (Cohen & Wills, 1985), perceived social support did not mitigate the relationship between assault severity and PTSD symptoms or the relationship between assault severity and depressive symptoms. Although there was not support for a significant interaction effect, there were significant main effects of perceived social support on PTSD symptoms and depressive symptoms. Thus, the model was revised to incorporate a main effect of perceived social support on mental health symptoms.

The hypothesized mediation model, consistent with the literature, focused on mental health symptoms (PTSD symptoms and depressive symptoms) as mediators between sexual assault severity and health outcomes (physical health symptoms and drinking problems). The model was revised by removing the nonsignificant path between depressive symptoms and drinking problems, and by incorporating a main effect of social support. Another objective of this study was to examine the role of ethnicity as it relates to post-assault recovery and health outcomes. A multi-group path model was conducted to investigate evidence for a moderating effect of ethnicity (Hypothesis 8). As hypothesized, results indicated that African American and Caucasian victims were different at the model level. Thus, paths were examined one at a time to determine which paths differ between the groups.

The revised model fit was generally consistent with hypotheses. Hypothesis 3 was supported for the overall sample: more severe sexual assaults were related to (a) greater PTSD symptoms and (b) depressive symptoms. This is consistent with previous research examining assault severity in relation to recovery outcomes (Gidycz & Koss, 1991; Resnick et al., 1993; Ullman et al., 2007; Weaver & Clum, 1995). In addition, it was hypothesized that the relationship between sexual assault severity and PTSD symptoms would be stronger for African Americans (Hypothesis 8a). There was a positive statistically significant relationship between these variables for African Americans and Caucasians, however the path was not significantly different between the groups. Thus, Hypothesis 8(a) was not supported. This finding is contrary to Ullman and Filipas' (2001) study that found a stronger relationship between assault

severity and PTSD symptoms for African Americans victims as compared to Caucasian victims. Studies examining ethnicity as a moderator between sexual assault severity and PTSD symptoms are scarce, and thus more research is needed to elucidate these tentative findings.

The relationship between assault severity and depressive symptoms was statistically significant for African Americans, but not for Caucasians, and this difference between groups was statistically significant. Thus, Caucasians reported more depressive symptoms on average, and their depressive symptoms were not significantly predicted by assault severity. These findings suggest that Caucasians may be particularly vulnerable to experiencing depressive symptoms following sexual assault regardless of assault severity. In contrast, for African Americans, assault severity was significantly predictive of depressive symptoms.

Consistent with literature linking perceived social support to recovery following a traumatic event (Kaniasty & Norris, 1992; Norris & Kaniasty, 1996), less perceived social support was related to greater PTSD and depressive symptoms for the overall sample. The relationships between perceived social support and mental health symptoms were significant for African Americans and Caucasians, and the groups were not significantly different. Thus, less perceived social support is harmful to mental health for women of both ethnicities.

Consistent with previous research (Campbell et al., 2008; Eadie et al., 2008; Koss et al., 2002; Tansill et al., 2012; Zinzow et al., 2011; Zoellner et al., 2000) and Hypothesis 4, (a) greater PTSD symptoms were related to more physical health

symptoms; (b) greater depressive symptoms also were associated with more physical health symptoms. This finding provides further support that psychological distress is an important mechanism through which sexual victimization affects health. Contrary to Hypotheses 8(b) and 8(c), the relationships between mental health symptoms and physical health symptoms were not significantly different between African Americans and Caucasians. These findings are counterintuitive to the weathering hypothesis (Geronimus, 1992), which posits that African Americans are disproportionately more likely to experience physical health problems. However, these hypotheses were largely exploratory; to date no other studies have examined ethnicity as a moderator between sexual assault and physical health symptoms. More research is needed to examine if ethnicity interacts with assault severity in predicting physical health problems.

The paths between (a) PTSD symptoms and drinking problems and (b) depressive symptoms and drinking problems were not significant for the overall sample. Thus, Hypothesis 5 was not supported. This finding is in contrast to several theoretical explanations for the relationship between psychological distress and problematic drinking (Cappell & Greeley, 1987; Cooper et al., 1995; Conger, 1956). Future research should consider measures that assess drinking as a coping mechanism. Consistent with Hypothesis 8(d), ethnicity moderated the relationship between PTSD symptoms and drinking problems. Whereas PTSD symptoms significantly predicted drinking problems among African Americans, this relationship was not significant for Caucasians. This finding is consistent with a previous study on ethnic differences in sexual assault recovery (Littleton & Ullman, 2013). Littleton and Ullman posited the

finding could be due to the fact that African Americans had more severe PTSD symptoms in their sample. However, that was not the case for the current study; although African Americans and Caucasians reported similar levels of PTSD symptoms, when African Americans experienced PTSD symptoms, they also were more likely to experience drinking problems.

As predicted (Hypothesis 6), assault severity was indirectly related to physical health symptoms through PTSD symptoms and depressive symptoms among the full sample. The same pattern was found for African Americans; however there was not a significant indirect effect between severity and physical health symptoms for Caucasians. As predicted in the revised model (Figure 2), perceived social support was indirectly related to physical health problems through PTSD symptoms and depressive symptoms.

Contrary to Hypothesis 7, severity was not indirectly related to drinking problems through PTSD symptoms and depressive symptoms among the full sample. However, there was a significant indirect effect for African Americans. Moreover, perceived social support was not indirectly related to drinking problems through PTSD symptoms and depressive symptoms among the full sample or Caucasians; however, there was a significant indirect effect for African Americans. These findings are preliminary and warrant additional research attention. Future research should continue to examine differential recovery processes for women of different ethnicities.

Limitations

One limitation of the current study was that assault characteristics were measured retrospectively. Participants were approximately 9 years post-assault on average at the time of the study, thus their recollections of their experiences may not be very accurate due to recall bias. In addition, all measures in the current study were self-reports. Although participants were assured their data would be confidential, it is possible that some participants underreported unwanted sexual experiences and post-assault experiences due to embarrassment or perceived stigma. Another limitation of this study is the cross-sectional design, which impedes the ability to make causal or temporal inferences about study variables. Future research should recruit participants shortly after sexual assault and follow them over a period of time. Longitudinal research can help identify post-assault experiences that precede health outcomes, and the mechanisms through which post-assault experiences and health outcomes takes place.

Future Directions

This study found evidence to suggest that Caucasians may be particularly vulnerable to experiencing depressive symptoms following sexual assault. First, Caucasians reported higher mean levels of depressive symptoms. This finding is consistent with previous studies suggesting that, compared to African Americans, Caucasians are more likely to experience depressive symptoms following sexual assault victimization (Caetano & Cunradi, 2003; Kaukinen & DeMaris, 2005). However, research examining ethnic differences in victims' depressive symptoms is equivocal; other studies have not found differences (Littleton et al., 2012; Plichta & Falik, 2001;

Ullman & Filipas, 2005). Thus, more research is needed to determine if these ethnic differences exist. Furthermore, assault severity was not related to depressive symptoms for Caucasian victims, whereas assault severity and depressive symptoms were associated for African Americans victims. Thus, Caucasians reported higher levels of depressive symptoms regardless of assault severity. More research is needed to explain why assault severity is associated with depressive symptoms for some sexual assault victims and not others.

Future research should examine how coping strategies vary according to ethnicity, such as drinking as a coping motive. This could potentially explain the finding that ethnicity moderated the relationship between PTSD symptoms and drinking problems. Although African Americans and Caucasians reported similar levels of PTSD symptoms and drinking problems, the pathway between PTSD symptoms and drinking problems was significant only for African Americans. In addition, religious coping strategies may be an important component of recovery to consider. Future studies should examine the role of religious coping in sexual assault recovery for African Americans and Caucasians. For instance, Adofoli and Ullman (2014) found that religious coping was associated with less drinking to cope and less frequent drinking in their community sample of African American sexual assault victims.

Implications for Treatment or Policy

These findings have practical and clinical implications. First, it is common for mental health issues to co-occur with physical health symptoms and drinking problems among victims of sexual assault. Thus, counselors and therapists should be aware of

these interrelated outcomes in order to effectively treat victims. In addition, it is imperative that mental health care providers receive cultural competence training (Bryant-Davis et al., 2009) in order to effectively identify their patients' needs and respond in a culturally sensitive manner. Practitioners should be aware of unique risk factors for victims of diverse ethnic backgrounds. For instance, African American victims suffering from PTSD symptoms may be more vulnerable to hazardous alcohol use. If clinicians are aware of these unique risk factors, they may be able to tailor their treatment plan.

It also is imperative for researchers, clinicians, advocates, and community agencies to collaborate to establish comprehensive, culturally-inclusive intervention programs. These efforts should be grounded in a theoretical framework, such as the culturally inclusive ecological model of sexual assault recovery (CIEMSAR; Neville & Heppner, 1999). The CIEMSAR model proposes that culture affects all aspects of sexual assault recovery. Specifically, the model attempts to contextualize sexual assault recovery by examining how cultural variables affect preassault variables (e.g., demographic characteristics, preassault mental health, attributions, and general coping strategies), assault variables (e.g., relationship to the perpetrator and assault severity), and postassault variables (e.g., social support and mental health interventions). By contextualizing sexual assault recovery in this manner, the CIEMSAR model implies that there are multiple avenues for treatment and intervention.

Findings from previous research suggest that African Americans may be less likely to disclose their victimization than Caucasians and reluctance to disclose the

incident can have negative implications for one's health (Jacques-Tiura et al., 2010; Washington, 2001). The CIEMSAR model can be used to identify victims' barriers for receiving proper health care following victimization, such as perceived discrimination and cultural differences in the importance of "self-reliance" (El-Khory et al., 2004; Washington, 2001; West, 2006). For instance, African Americans may feel pressured to maintain a "strong black woman" expectation, and paradoxically, experience more psychological distress by not disclosing the event and receiving the support they need.

In the current study, African Americans reported significantly less satisfaction with their social support network than Caucasians. This is consistent with previous research suggesting that African Americans receive more stigmatizing and negative social reactions after sexual assault disclosure than do Caucasians (Campbell et al., 2001; Wyatt, 2002). With this in mind, it is imperative that medical personnel, mental health care providers, and law enforcement authorities respond to victims appropriately and do not exacerbate their traumatization.

Conclusion

In conclusion, hypotheses regarding ethnicity as a moderator in sexual assault recovery were partially supported. The most notable differences emerged in the following pathways: sexual assault severity to depressive symptoms, and PTSD symptoms to drinking problems. Despite the limitations, this study makes important contributions to the sexual assault victimization literature. Most notably, this study emphasizes the importance of incorporating cultural variables in studying sexual assault victims' recovery. Few studies have attempted to investigate these potential

differences, and thus, this study contributes to this gap in the literature. Findings from the current study suggest there may be important differences in sexual assault victims' experiences based on ethnicity. Much of the research in this domain has been conducted with primarily Caucasian samples, and thus theoretical models of recovery processes may not be as applicable to women from other ethnic groups. Continued research in this area could identify culturally-relevant mechanisms that explain differences in victims' recovery processes.

Table 1.

Bivariate Correlations among Severity Items (N = 221)

	1	2	3	4	5	6	7	8	9
Perpetrator's force	----								
Assault type	.16*	----							
Sum of injuries	.58**	.16*	----						
Post-assault threat	.39**	.11	.50**	----					
Immediate negative affect	.50**	.27**	.43**	.25**	----				
Considered a sexual offense	.39**	.28**	.41**	.31**	.54**	----			
Seriousness at the time	.27**	.25**	.23**	.14*	.48**	.67**	----		
Seriousness now	.26**	.18**	.29**	.19**	.43**	.58**	.57**	----	
Disrupted relationships with men	.29**	.15*	.30**	.26**	.49**	.45**	.42**	.47**	----

Note: * $p < .05$. ** $p < .01$. Correlations were computed using the original version of these items.

Table 2.

Descriptive Statistics of Severity Items (N = 221)

Variable	Mean	SD	Range	Factor
				loadings
Perpetrator's force	1.95	1.73	0-9	.65
Assault type	3.21	1.17	2-5	.37
Sum of injuries	0.74	1.13	0-5	.65
Post-assault threat	0.39	0.77	0-3	.50
Immediate negative affect	5.73	5.13	0-19	.77
Considered it a sexual offense	4.47	2.27	1-7	.81
Seriousness at the time	4.65	2.21	1-7	.71
Seriousness now	4.16	2.21	1-7	.70
Disrupted relationships with men	2.81	1.34	1-5	.67

Note: Descriptive information was computed using the original version of items. Factor loadings were computed using z-scores.

Table 3.

Descriptive Information for Type of Sexual Assault Experience (N = 221)

	African Americans (<i>n</i> = 121)	Caucasians (<i>n</i> = 100)
Forced sexual contact	37.2% (<i>n</i> = 45)	32% (<i>n</i> = 32)
Sexual coercion	32.2% (<i>n</i> = 39)	35% (<i>n</i> = 35)
Attempted rape	7.4% (<i>n</i> = 9)	7% (<i>n</i> = 7)
Completed rape	23.1% (<i>n</i> = 28)	26% (<i>n</i> = 26)

Note: There is no statistically significant association between ethnicity and assault type ($\chi^2 = .75$, $p = .86$).

Table 4.

Mean Level Differences in Study Variables

	African Americans (n = 121)		Caucasians (n = 100)			
Variables	M	SD	M	SD	F(1, 219)	p
Demographics						
Income per person	11,513.32	11,396.97	17,922.41	13,530.00	14.61	< .001
Education level	5.31	1.83	5.73	1.81	2.86	.09
Current age	32.83	9.22	30.63	10.03	2.89	.09
Years since assault	9.41	8.38	9.20	8.53	.03	.86
Latent Variables ^a						
Sexual assault severity	-.04	.65	.05	.65	1.00	.32
Perceived social support	3.74	1.12	4.20	.79	11.77	.001
PTSD symptoms	2.02	.96	1.88	.76	1.42	.23
Depressive symptoms	3.93	6.09	7.34	8.41	12.14	.001
Physical health symptoms	1.47	.46	1.47	.40	.007	.94
Drinking problems	.81	1.72	1.19	1.54	2.91	.09

Note: Severity scale was computed using z-scores. For education level, 1 = some grade school; 2 = 8th grade graduate; 3 = some high school; 4 = high school or GED graduate; 5 = some college; 6 = vocational/ technical degree; 7 = associate's degree; 8 = bachelor's degree; 9 = master's degree; 10 = professional/ doctoral degree. ^aANCOVAs are controlling for income.

Table 5.

Partial Correlations among Study Variables (N = 221)

Variable	1	2	3	4	5	6
1. Severity	----					
2. Social support	.14*	----				
3. PTSD symptoms	.56***	-.14*	----			
4. Depressive symptoms	.16*	-.14*	.42***	----		
5. Physical health symptoms	.14*	-.11	.36***	.40***	----	
6. Drinking problems	.12	-.12	.15*	.19**	.22**	----

Note: Matrix is controlling for income. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6.

Partial Correlations among Study Variables for African Americans and Caucasians (N = 221)

Variable	1	2	3	4	5	6
1. Severity	----	.11	.57***	.33***	.25***	.17
2. Social support	.15	----	-.13	-.19*	-.16	-.13
3. PTSD symptoms	.58***	-.13	----	.62***	.43***	.25**
4. Depressive symptoms	.00	-.25*	.29**	----	.49***	.19*
5. Physical health symptoms	-.01	-.08	.26**	.37***	----	.31**
6. Drinking problems	.12	-.21*	.01	.13	.07	----

Note: Matrix is controlling for income. * $p < .05$. ** $p < .01$. *** $p < .001$.

Correlations for African Americans are located on the top of the matrix.

Correlations for Caucasians are located on the bottom of the matrix.

Table 7.

Hierarchical Multiple Regression Analysis Relating PTSD Symptoms with Severity and Social Support (N = 221)

Variable	B	SEB	β	ΔR^2
Step 1				
Ethnicity of participant ^a	-.09	.12	-.05	
Income	.00	.00	-.12	.02
Step 2				
Severity centered	.81	.07	.59*	
Perceived social support centered	-.18	.05	-.21*	.36*
Step 3				
Severity X perceived social support	-.03	.08	-.02	.00
Total Variance Explained				36.4%

* $p < .001$. ^aAfrican American = 0; Caucasian = 1.

Table 8.

Hierarchical Multiple Regression Analysis Relating Depressive Symptoms with Severity and Social Support (N = 221)

Variable	B	SEB	β	ΔR^2
Step 1				
Ethnicity of participant ^a	3.79	1.01	2.56**	
Income	.00	.00	-.10	.06*
Step 2				
Severity centered	1.99	.74	.17*	
Perceived social support centered	-1.66	.48	-.23*	.07**
Step 3				
Severity X perceived social support	-1.38	.74	-.12	.01
Total Variance Explained				12.5%

* $p < .01$. ** $p < .001$. ^aAfrican American = 0; Caucasian = 1.

Table 9.

Standardized Direct, Indirect, and Total Effects of Study Variables on Physical Health Symptoms and Drinking Problems

	Overall Sample			African Americans			Caucasians		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
	Effect	Effect	Effect	Effect	Effect	Effect	Effect	Effect	Effect
Physical health symptoms									
Severity	x	0.24	0.24	x	0.30	0.30	x	0.14	0.14
Social support	x	-0.12	-0.12	x	-0.14	-0.14	x	-0.14	-0.14
PTSD symptoms	0.25	x	0.25	0.21	x	0.21	0.18	x	0.18
Depressive symptoms	0.32	x	0.32	0.39	x	0.39	0.34	x	0.34
Drinking problems									
Severity	x	0.13	0.13	x	0.20	0.20	x	0.01	0.01
Social support	x	-0.05	-0.05	x	-0.07	-0.07	x	-0.01	-0.01
PTSD symptoms	0.19	x	0.19	0.30	x	0.30	0.02	x	0.02

Note: Values in bold are significant at $p < .05$.

Table 10.

Multi-group Comparison Analysis Testing the Moderating Effect of Ethnicity

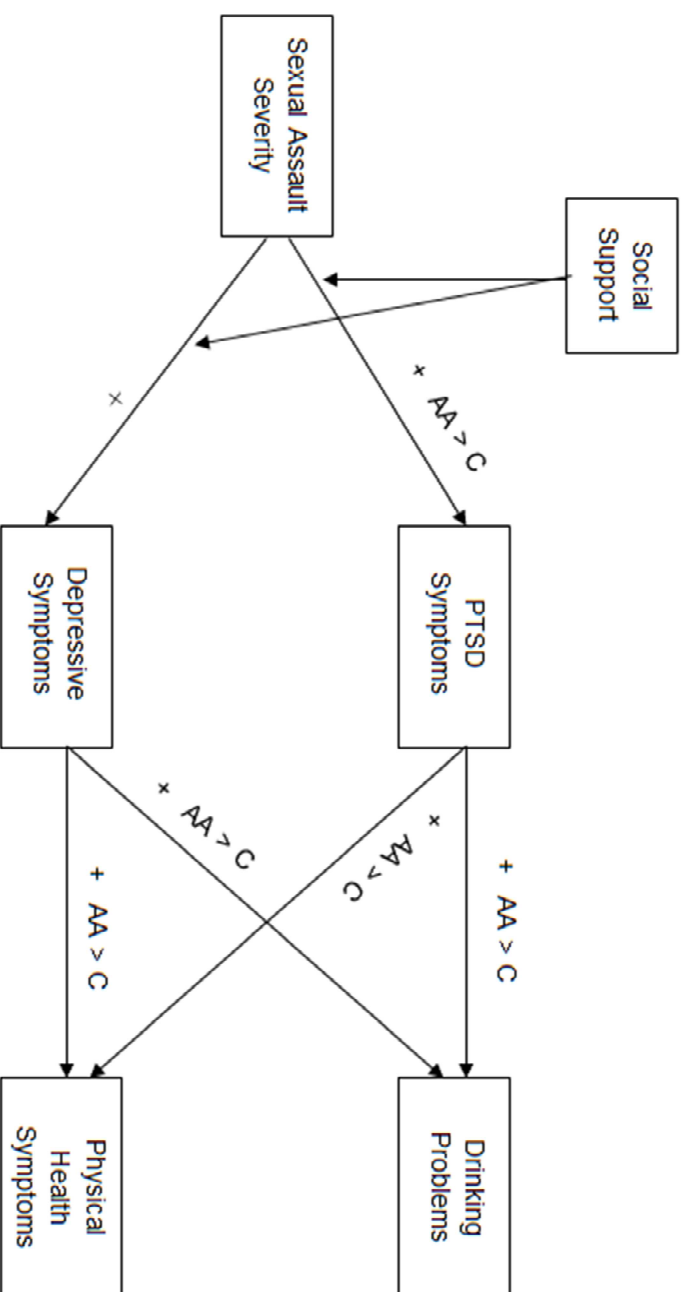
		Overall	Multi-group		
		sample	comparison		
		Path	African		
From	To	coefficient	Americans	Caucasians	Fischer z
Severity	PTSD	.68***	.67***	.70***	-.41
	symptoms				
Severity	Depressive	.21*	.40***	.05	2.73**
	symptoms				
Social support	PTSD	-.25**	-.23**	-.26**	-.23
	symptoms				
Social support	Depressive	-.18	-.25**	-.27**	-.16
	symptoms				
PTSD	Physical	.25*	.21	.18	.23
symptoms	health				
	symptoms				
PTSD	Drinking	.19	.30**	.02	2.11*
symptoms	problems				
Depressive	Physical	.32**	.39***	.34**	.42
symptoms	health				
	symptoms				

Note: N (overall sample) = 221. N (African Americans) = 121. N (Caucasians) = 100.

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

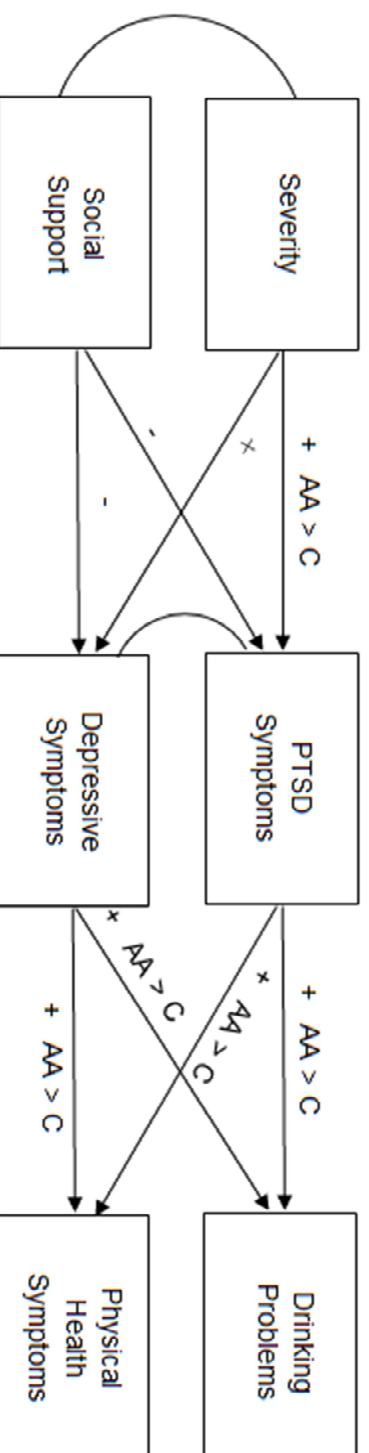
FIGURES

Figure 1. Hypothesized Model of Sexual Assault Severity as it Relates to PTSD Symptoms, Depressive Symptoms, Physical Health Symptoms, and Drinking Problems (N = 221)



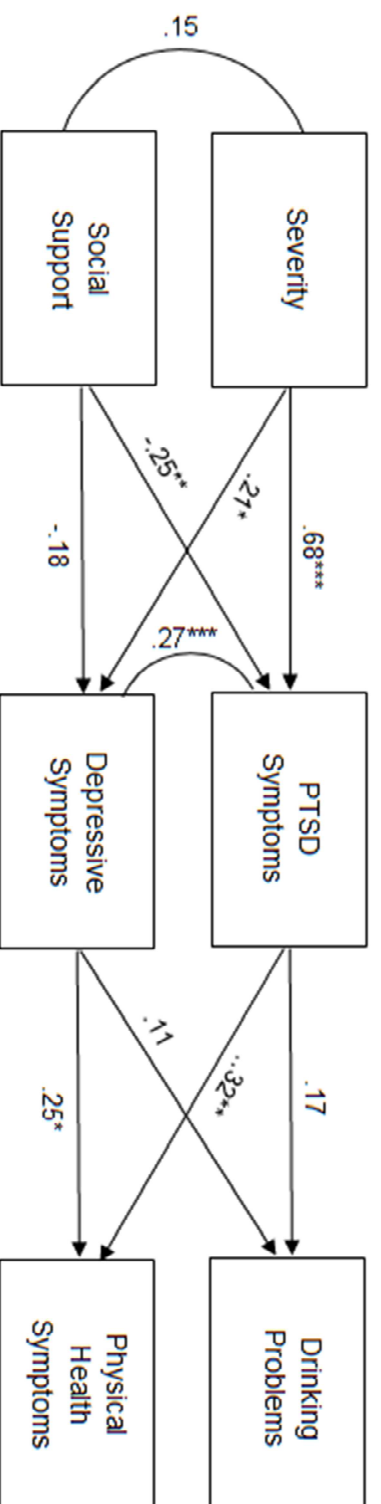
Note: Model will control for any significant differences in demographic characteristics. AA denotes African Americans. C denotes Caucasians.

Figure 2. Revised Hypothesized Model of Sexual Assault Severity as it Relates to PTSD Symptoms, Depressive Symptoms, Physical Health Symptoms, and Drinking Problems ($N = 221$)



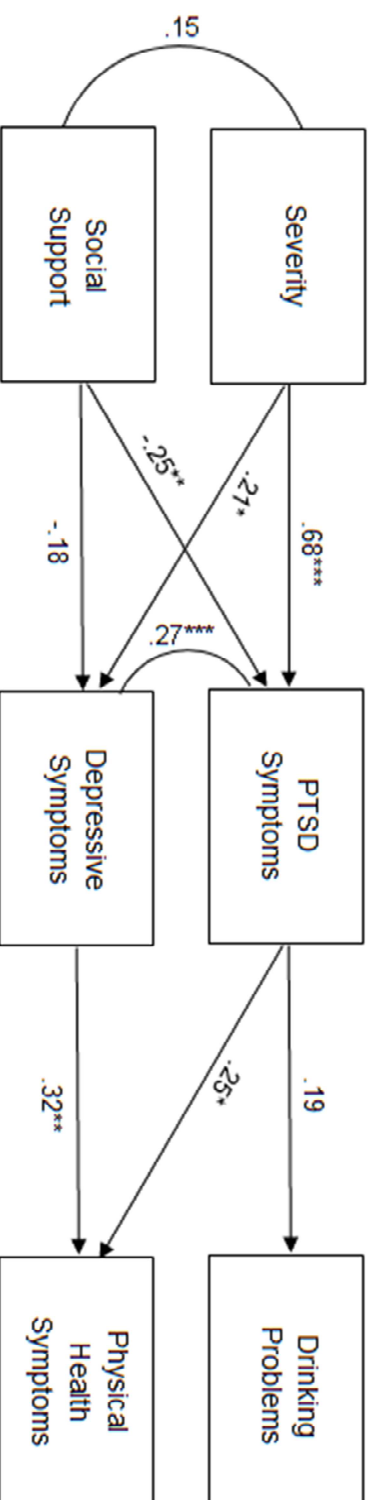
Note: Model will control for any significant differences in demographic characteristics. AA denotes African Americans. C denotes Caucasians.

Figure 3. Model of Sexual Assault Severity as it Relates to PTSD Symptoms, Depressive Symptoms, Physical Health Symptoms, and Drinking Problems (N = 221)



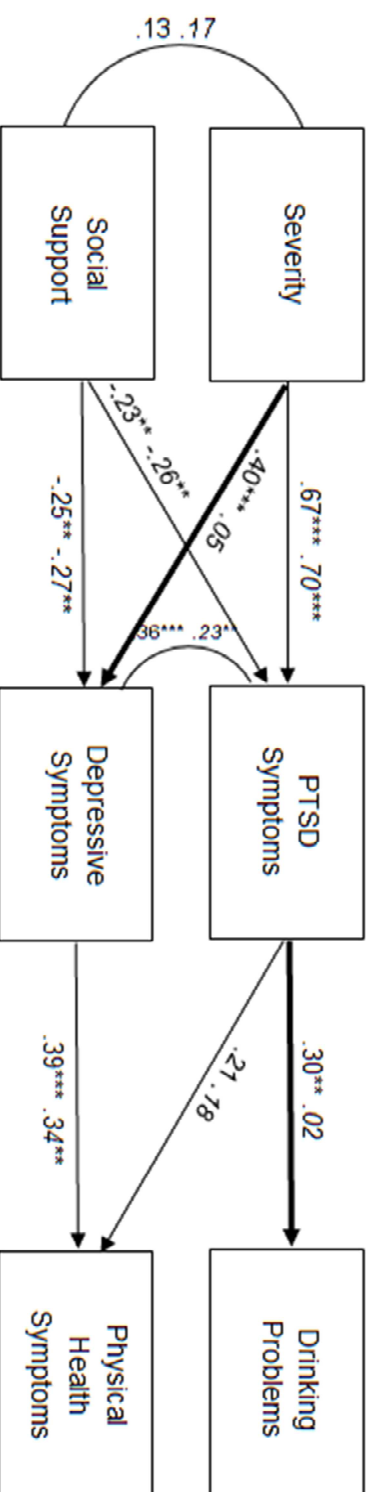
Note: Standardized loadings shown. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 4. Model of Sexual Assault Severity as it Relates to PTSD Symptoms, Depressive Symptoms, Physical Health Symptoms, and Drinking Problems (N = 221): Removed Path from Depressive Symptoms to Drinking Problems



Note: Standardized loadings shown. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Figure 5. Revised Model of Sexual Assault Severity as it Relates to PTSD Symptoms, Depressive Symptoms, Physical Health Symptoms, and Drinking Problems ($N = 221$): Multi-group Comparison



Note: Standardized loadings shown. Path coefficients for African Americans appear first in regular font. Path coefficients for Caucasians appear second in italics. Pathways that are significantly different between groups have a bolded arrow. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

APPENDIX A

Demographic Questionnaire

We would now like to ask some general background questions. This helps us determine if people with different types of backgrounds have similar or different experiences. Please try to answer all questions. Thank you.

1. What is your birth date? __ __ / __ __ / __ __

2. What is your ethnicity?

- | | |
|-------------------------------|---|
| 1. African American/ Black | 5. Hispanic |
| 2. Arabic or Middle Easterner | 6. Native American/ American Indian |
| 3. Asian or Pacific Islander | 7. Other (please write on answer sheet) |
| 4. Caucasian/ White | |

3. What is your highest level of education?

- | | |
|-----------------------------------|--|
| 1. Some grade school | 7. Associate's degree |
| 2. 8 th grade graduate | 8. Bachelor's degree |
| 3. Some high school | 9. Master's degree |
| 4. High school graduate (or GED) | 10. Professional degree (M.D., D.D.S, J.D, etc.) |
| 5. Some college | 11. Doctoral degree (Ph.D.) |
| 6. Vocational/ technical degree | |

4. How many people live in your household? __ __

5. What is your annual household income?

- | | |
|-----------------------|------------------------|
| 1. 0- \$9,999 | 9. \$40,000-\$44,999 |
| 2. \$10,000-\$14,999 | 10. \$45,000-\$49,999 |
| 3. \$15,000-\$19,999 | 11. \$50,000-\$54,999 |
| 4. \$20,000-\$24,999 | 12. \$55,000-\$59,999 |
| 5. \$25,000- \$29,999 | 13. \$60,000-\$64,999 |
| 6. \$30,000-\$34,999 | 14. \$65,000-\$69,999 |
| 7. \$35,000-\$39,999 | 15. \$70,000-\$74,999 |
| 8. \$40,000-\$44,999 | 16. more than \$75,000 |

6. What type of job do you have? If you are not sure which category your job goes under, please ask the interviewer for assistance.

1. White Collar, or professional
2. Medical Care Giver
3. Religious Worker
4. Teacher
5. Technician
6. Entertainer
7. Sales, Clerks, Office Machine Operator
8. Blue Collar and Some Skilled Trades
9. Semi-Skilled Blue Collar
10. Machine Operator
11. Transportation
12. Miscellaneous Laborer
13. Cleaning Service Worker
14. Food Service Worker
15. Health Service Worker
16. Personal Service Worker
17. Protective Service Worker
18. Homemaker
19. Unemployed
20. Retired/Pension
21. Public Assistance

7. What is your current relationship status?

1. Single - not dating exclusively
2. Single - in exclusive dating relationship
3. Divorced
4. Widowed
7. Other (please write on answer sheet)

APPENDIX B

Sexual Experiences Survey

This next set of questions ask about unwanted sexual experiences with men. The man could be anyone: for example, a stranger, a friend, a coworker, a date, a relative, a boyfriend, or a husband. We want you to think about experiences that happened since you were 14 years old. These questions are personal, but they have been asked of women across the country, and over half have had one or more of these experiences. Please remember that your name is not on the interview and no one else will ever see your answers. We hope that you will give thoughtful and honest answers to these questions.

This first set of questions deals with unwanted fondling, kissing, or petting, but not intercourse.

1. How many times have you given in to sex play (fondling, kissing, or petting, but not intercourse) when you didn't want to because you were overwhelmed by a man's continual arguments and pressure? (from age 14 on)

0. never	3. three times
1. once	4. four times
2. twice	5. five or more times

(IF "0" , SKIP TO #2)

The next several questions will be asked about up to three incidents. You can decide what order you'd like to describe them. If this occurred only once, you'll only answer questions about the one incident.

a. How old were you at the time? ____

(Remember that we are asking about experiences that you may have had since the age of 14. This number should be 14 or higher.)

b. How old was the man at the time this happened? ____

c. Which response best describes your relationship with the man?

- | | |
|----------------------------------|--|
| 01. Stranger | 09. Casual date |
| 02. Acquaintance | 10. Steady dating partner |
| 03. Casual friend | 11. Ex-boyfriend |
| 04. Close friend | 12. Fiancé |
| 05. Coworker who you hardly knew | 13. Spouse |
| 06. Coworker you knew well | 14. Ex-spouse |
| 07. Your boss | 15. Relative |
| 08. First date | 16. Neighbor |
| | 17. Other (please write on answer sheet) |

d. How much alcohol did he consume?

- | | |
|-------------------------|----------------------------|
| 1. None, zero drinks | 5. Seven or eight drinks |
| 2. One or two drinks | 6. Nine or ten drinks |
| 3. Three or four drinks | 7. Eleven or twelve drinks |
| 4. Five or six drinks | 8. Thirteen or more drinks |

e. How much alcohol did you consume?

- | | |
|-------------------------|----------------------------|
| 1. None, zero drinks | 5. Seven or eight drinks |
| 2. One or two drinks | 6. Nine or ten drinks |
| 3. Three or four drinks | 7. Eleven or twelve drinks |
| 4. Five or six drinks | 8. Thirteen or more drinks |

f. If you were to think about the worst possible thing that could happen in your life as 0 and the best possible thing that could happen in your life as 10. What number would you use to describe this experience with this man?

0	1	2	3	4	5	6	7	8	9	10
Worst										Best
Possible										Possible

If this happened only once, skip to #2. If this happened more than once, read the following instructions.

Now we will ask the same questions about the second incident.

a. How old were you at the time? _____

(Remember that we are asking about experiences that you may have had since the age of 14. This number should be 14 or higher.)

b. How old was the man at the time this happened? _____

c. Which response best describes your relationship with the man?

- | | |
|----------------------------------|--|
| 01. Stranger | 09. Casual date |
| 02. Acquaintance | 10. Steady dating partner |
| 03. Casual friend | 11. Ex-boyfriend |
| 04. Close friend | 12. Fiancé |
| 05. Coworker who you hardly knew | 13. Spouse |
| 06. Coworker you knew well | 14. Ex-spouse |
| 07. Your boss | 15. Relative |
| 08. First date | 16. Neighbor |
| | 17. Other (please write on answer sheet) |

d. How much alcohol did he consume?

- | | |
|-------------------------|----------------------------|
| 1. None, zero drinks | 5. Seven or eight drinks |
| 2. One or two drinks | 6. Nine or ten drinks |
| 3. Three or four drinks | 7. Eleven or twelve drinks |
| 4. Five or six drinks | 8. Thirteen or more drinks |

e. How much alcohol did you consume?

- | | |
|-------------------------|----------------------------|
| 1. None, zero drinks | 5. Seven or eight drinks |
| 2. One or two drinks | 6. Nine or ten drinks |
| 3. Three or four drinks | 7. Eleven or twelve drinks |
| 4. Five or six drinks | 8. Thirteen or more drinks |

f. If you were to think about the worst possible thing that could happen in your life as 0 and the best possible thing that could happen in your life as 10. What number would you use to describe this experience with this man?

0	1	2	3	4	5	6	7	8	9	10
Worst Possible										Best Possible

If this happened only twice, skip to #2.

If this happened more than twice, read the following instructions.

*Now we will ask the same questions about the **third** incident.*

a. How old were you at the time? __ __

(Remember that we are asking about experiences that you may have had since the age of 14. This number should be 14 or higher.)

b. How old was the man at the time this happened? __ __

c. Which response best describes your relationship with the man?

- | | |
|----------------------------------|--|
| 09. Stranger | 09. Casual date |
| 10. Acquaintance | 10. Steady dating partner |
| 11. Casual friend | 11. Ex-boyfriend |
| 12. Close friend | 12. Fiancé |
| 13. Coworker who you hardly knew | 13. Spouse |
| 14. Coworker you knew well | 14. Ex-spouse |
| 15. Your boss | 15. Relative |
| 16. First date | 16. Neighbor |
| | 17. Other (please write on answer sheet) |

d. How much alcohol did he consume?

- | | |
|-------------------------|----------------------------|
| 5. None, zero drinks | 5. Seven or eight drinks |
| 6. One or two drinks | 6. Nine or ten drinks |
| 7. Three or four drinks | 7. Eleven or twelve drinks |
| 8. Five or six drinks | 8. Thirteen or more drinks |

e. How much alcohol did you consume?

- | | |
|-------------------------|----------------------------|
| 5. None, zero drinks | 5. Seven or eight drinks |
| 6. One or two drinks | 6. Nine or ten drinks |
| 7. Three or four drinks | 7. Eleven or twelve drinks |
| 8. Five or six drinks | 8. Thirteen or more drinks |

f. If you were to think about the worst possible thing that could happen in your life as 0 and the best possible thing that could happen in your life as 10. What number would you use to describe this experience with this man?

0	1	2	3	4	5	6	7	8	9	10
Worst										Best
Possible										Possible

Note: Same follow-up questions about age, relationship, etc. appear after each question. Up to 3 mentions.

2. How many times have you given in to sex play (fondling, kissing, or petting, but not intercourse) when you didn't want to because a man used his position of authority (boss, teacher, camp counselor, clergy member, supervisor) to make you? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

3. How many times have you given in to sex play (fondling, kissing, or petting but not intercourse) when you didn't want to because a man threatened or used some degree of physical force (twisting your arm, holding you down, grabbing, choking, pinching, or any way of restraining your movements or physically hurting you) to make you? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

The following questions are about attempted sexual intercourse. By attempted sexual intercourse we mean when a man gets on top of a woman and tries to insert his penis inside of her vagina; but for some reason, intercourse does not occur.

4. How many times have you had a man attempt sexual intercourse when you didn't want to because he used his position of authority (boss, teacher, camp counselor, clergy member, supervisor) but intercourse did not occur? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

5. How many times have you had a man attempt sexual intercourse (get on top of you, attempt to insert his penis) when you didn't want to by threatening or using some degree of physical force (twisting your arm, holding you down, grabbing, choking, pinching, or any way of restraining your movements or physically hurting you) but intercourse did not occur? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

6. How many times have you had a man attempt sexual intercourse (got on top of you, attempt to insert his penis) with you when you didn't want to by giving you alcohol or drugs, but intercourse did not occur? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

The following questions are about sexual intercourse. By sexual intercourse we mean penetration of a woman's vagina, no matter how slight, by a man's penis. Ejaculation is not required. Whenever you see the term "sexual intercourse", please use this definition.

7. How many times have you given in to sexual intercourse when you didn't want to because you were overwhelmed by a man's continual arguments and pressure? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

8. How many times have you given in to sexual intercourse when you didn't want to because a man showed his displeasure (for example, sulking, making you feel guilty, swearing, getting angry, threatening to end the relationship) until he got his way? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

9. How many times have you had sexual intercourse when you didn't want to because a man used his position of authority (boss, camp counselor, teacher, clergy member, supervisor) to make you? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

10. How many times have you had sexual intercourse when you didn't want to because a man gave you alcohol or drugs? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

11. How many times have you had sexual intercourse when you didn't want to because a man threatened or used some degree of physical force (twisting your arm, holding you down, grabbing, choking, pinching, or any way of restraining your movements or physically hurting you) to make you? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

12. How many times have you had sexual intercourse with a man when you didn't want to because you were unable to give consent, perhaps because you were drunk or taking drugs at the time, or because you are a heavy sleeper, or because you were unconscious for any reason? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

The following questions are about the sex acts of oral sex, anal sex or penetration by objects other than a penis. By anal sex we mean that the man put his penis in your anus. Whenever you see the term "anal sex", please use this definition. By oral sex we mean that the man put his penis in your mouth or he penetrated your vagina or anus with his mouth or tongue. Whenever you see the term "oral sex", please use this definition. By penetration by an object, we mean that the man put some type of object, for example a stick, bottle or sex toy, in your vagina, anus, or mouth.

13. How many times have you had sex acts (anal sex, oral sex or penetration by an object) when you didn't want to because you were overwhelmed by a man's continual arguments and pressure? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

14. How many times have you had sex acts (anal sex, oral sex or penetration by an object) when you didn't want to because a man showed his displeasure (for example, sulking, making you feel guilty, swearing, getting angry, threatening to end the relationship) until he got his way? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

15. How many times have you had sex acts (anal sex, oral sex or penetration by an object) when you didn't want to because a man gave you alcohol or drugs? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

16. How many times have you had sex acts (anal sex or oral sex or penetration by an object) when you didn't want to because a man threatened or used some degree of physical force (twisting your arm, holding you down, grabbing, choking, pinching, or any way of restraining your movements or physically hurting you) to make you? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

17. How many times have you been raped? (from age 14 on)

- | | |
|----------|-----------------------|
| 0. never | 3. three times |
| 1. once | 4. four times |
| 2. twice | 5. five or more times |

APPENDIX C

Sexual Assault Severity

1. *Seriousness at the Time*

Which number best describes how serious this experience was to you at the time?

1	2	3	4	5	6	7
Not Very Serious						Very Serious

2. *Seriousness Now*

Which number best describes how serious this experience was to you now?

1	2	3	4	5	6	7
Not Very Serious						Very Serious

3. *Perpetrator's Force*

1. Which of the following types of pressure or force did he use during the unwanted sexual activity? Check all that happened.

- ☐ Making false promises (saying he loved you or wanted to see you again.)
- ☐ Talking, verbal comments, suggestions (for example "Oh baby, I know you'll like it"; "Come on, I can make you feel real good").
- ☐ Pressure or coercion with words (for example making demands, implying you owed him, or that he could make trouble for you).
- ☐ Threats to break off or end the relationship.
- ☐ Use of alcohol to make you more vulnerable.
- ☐ Use of drugs to make you more vulnerable.
- ☐ Took advantage of the fact that you were sleeping or passed out.
- ☐ Implied through his behavior that he could become violent (for example kicked or hit things, slammed his fist).
- ☐ Verbal threats of violence or physical force (for example "You don't want me to get tough, do you?"; "Listen, bitch, you better stop squirming").
- ☐ Use of mild violence or physical force (for example pushed you down, twisted

your arm or held you down).

_____ Use of extreme violence or physical force (for example he hit you, choked you, or beat you).

_____ Threatened use of a weapon or object that could hurt you.

_____ Used a weapon or object to hurt you.

_____ Other. (Please write on answer sheet)

4. Extent to Which Considered a Sexual Offense/ Rape

Which number best describes the extent to which you considered what happened to be rape?

1	2	3	4	5	6	7
Definitely						Definitely
Not Rape						Rape

Some people would not label an event as rape but they consider it to be some other form of a sexual offense. Which number best describes the extent to which you considered what happened to be rape?

1	2	3	4	5	6	7
Definitely						Definitely
Not Rape						Rape

5. Extent to Which Incident Disrupted Relationships with Men

To what extent did this experience disrupt your relationships with men?

1	2	3	4	5
Not at All				Very Much

6. *Sum of Injuries*

Please select all injuries that resulted from the unwanted sexual activity.

- ☐ Sore muscles
- ☐ Bruises
- ☐ Cuts
- ☐ Black eye(s)
- ☐ Broken bones
- ☐ Vaginal tearing or bleeding
- ☐ Anal tearing or bleeding
- ☐ Other (please write)

Did you get pregnant as a result of the unwanted sexual activity?

- ☐ Yes
- ☐ No

Did you contract any type of sexually transmitted disease (std) as a result of the unwanted sexual activity?

- ☐ Yes
- ☐ No

Which of the following sexually transmitted diseases did you contract as a result of the unwanted sexual activity?

- ☐ Chlamydia
- ☐ Genital Warts
- ☐ Gonorrhea
- ☐ HIV, or AIDS virus
- ☐ Herpes
- ☐ Pelvic Inflammatory Disease (PID)
- ☐ Pubic Lice (crabs)
- ☐ Syphilis
- ☐ Trichomoniasis
- ☐ Other (please write)

7. Immediate Negative Affect

Immediately after the unwanted sexual activity to what extent did you feel:

1 Very uncomfortable	2	3	4	5	6	7 Very comfortable
1 Very sad	2	3	4	5	6	7 Very happy
1 Very unsafe	2	3	4	5	6	7 Very safe
1 Very nervous	2	3	4	5	6	7 Very calm
1 Very frightened	2	3	4	5	6	7 Very secure

8. Post-Assault Threat

Did any of the following happen right after the unwanted sexual activity occurred?
Please answer yes or no.

Did he threaten you after the unwanted sexual activity occurred?

_____ Yes
_____ No

Did he swear, insult or blame you after the unwanted sexual activity occurred?

_____ Yes
_____ No

Did he continue to physically hurt you after the unwanted sexual activity occurred?

_____ Yes
_____ No

9. Koss' SES group

Note: Determined by Sexual Experiences Survey, Appendix B. Participants were classified based on the most severe incident they reported (forced sexual contact [SES items 1, 2, and 3]; sexual coercion [SES items 7, 8, 9, and 13]; attempted rape [SES items 4, 5, and 6]; and completed rape [SES items 10, 11, 12, 14, 15, and 16]).

APPENDIX D

Davidson Trauma Scale

Sometimes when people go through serious events such as rape or other unwanted sexual experiences they experience things such as bad dreams or memories, health problems or certain fears. The following questions ask about various things that you may have experienced after the unwanted sexual activity which you have discussed.

1	2	3	4	5
Not At All	A Little	Sometimes	A Lot of the Time	All of the Time

1. How frequently have you had painful images, memories or thoughts of the event?
2. How frequently have you had distressing dreams of the event?
3. How frequently have you felt as though the event was re-occurring?
4. How frequently have you been upset by something which reminded you of the event?
5. How frequently have you been avoiding any thoughts or feelings about the event?
6. How frequently have you been avoiding doing things or going into situations which remind you about the event?
7. How frequently have you found yourself unable to recall important parts of the event?
8. How frequently have you had difficulty enjoying things?
9. How frequently have you felt distant or cut off from other people?
10. How frequently have you been unable to have sad or loving feelings?
11. How frequently have you found it hard to imagine having a long life span fulfilling your goals?
12. How frequently have you had trouble falling asleep or staying asleep?
13. How frequently have you been irritable or had outbursts of anger?
14. How frequently have you had difficulty concentrating?
15. How frequently have you felt on edge, been easily distracted, or had to stay 'on guard'?
16. How frequently have you been jumpy or easily startled?
17. How frequently have you been physically upset by reminders of the event?

APPENDIX E**Beck Depression Inventory (Subset of Items)**

Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling during the past week, including today. Select the number beside the statement which best describes your feelings. If several statements in the group seem to describe you equally well, try your best to choose only one. Be sure and read all the statements in each group before making your choice.

A.

1. I do not feel sad.
2. I feel sad.
3. I am sad all the time and I can't snap out of it.
4. I am so sad or unhappy that I can't stand it.

B.

1. I am not particularly discouraged about the future.
2. I feel discouraged about the future.
3. I feel I have nothing to look forward to.
4. I feel that the future is hopeless and that things cannot improve.

C.

1. I do not feel like a failure.
2. I feel I have failed more than the average person.
3. As I look back on my life, all I can see is a lot of failures.
4. I feel I am a complete failure as a person.

D.

1. I get as much satisfaction out of things as I used to.
2. I don't enjoy things the way I used to.
3. I don't get real satisfaction out of anything anymore.
4. I am dissatisfied or bored with everything.

E.

1. I don't feel particularly guilty.
2. I feel guilty a good part of the time.
3. I feel quite guilty most of the time.
4. I feel guilty all of the time.

F.

1. I don't feel I am being punished.
2. I feel I may be punished.
3. I expect to be punished.
4. I feel I am being punished.

G.

1. I don't feel disappointed in myself.
2. I am disappointed in myself.
3. I am disgusted with myself.
4. I hate myself.

H.

1. I don't feel I am any worse than anybody else.
2. I am critical of myself for my weaknesses or mistakes.
3. I blame myself all the time for my faults.
4. I blame myself for everything bad that happens.

I.

1. I don't have any thoughts of killing myself.
2. I have thoughts of killing myself, but I would not carry them out.
3. I would like to kill myself.
4. I would kill myself if I had the chance.

J.

1. I don't cry any more than usual.
2. I cry more now than I used to.
3. I cry all the time now.
4. I used to be able to cry, but now I can't cry even though I want to.

K.

1. I am no more irritated now than I ever am.
2. I am slightly more irritated now than usual.
3. I am quite annoyed or irritated a good deal of the time.
4. I feel irritated all the time now.

L.

1. I have not lost interest in other people.
2. I am less interested in other people than I used to be.
3. I have lost most of my interest in other people.
4. I have lost all of my interest in other people.

M.

1. I make decisions about as well as I ever could.
2. I put off making decisions more than I used to.
3. I have greater difficulty in making decisions than before.
4. I can't make decisions at all anymore.

N.

1. I don't feel I look any worse than I used to.
2. I am worried that I am looking old or unattractive.
3. I feel that there are permanent changes in my appearance that make me look unattractive.
4. I believe that I look ugly.

APPENDIX F**Perceived Social Support**

Answer these questions thinking about your close women friends.

1	2	3	4	5
Not at all satisfied	A little satisfied	Somewhat satisfied	Quite satisfied	Very satisfied

1. How satisfied are you with the extent to which you can really count on women friends to help you feel more relaxed when you are under pressure or tense?
2. How satisfied are you with the extent to which you can really count on women friends to accept you totally, including both your best and worst points?
3. How satisfied are you with the extent to which you can really count on women friends to care about you in both good times and bad times?
4. How satisfied are you with the extent to which you can really count on women friends to console you when you are very upset?
5. How satisfied are you with the extent to which you can really count on women friends to help with a problem?

APPENDIX G

Drinking Problems

For the next set of questions please think about the past 12 months. Indicate whether any of the following things have occurred.

- | | | |
|--|-----|----|
| 1. Once I started drinking it was difficult for me to stop (before I became completely intoxicated). | Yes | No |
| 2. I sometimes keep on drinking after I had promised myself not to. | Yes | No |
| 3. I deliberately tried to cut down or quit drinking, but I was unable to. | Yes | No |
| 4. I was afraid I might be an alcoholic. | Yes | No |
| 5. Sometimes I have needed a drink so badly that I couldn't think of anything else. | Yes | No |
| 6. I have skipped a number of regular meals while drinking. | Yes | No |
| 7. I have often taken a drink the first thing when I got up in the morning. | Yes | No |
| 8. I have taken a drink in the morning to get over the effects of last night's drinking. | Yes | No |
| 9. I have awakened the next day not being able to remember some of the things I had done while drinking. | Yes | No |
| 10. My hands shook a lot the morning after drinking. | Yes | No |
| 11. I need more alcohol than I used to, to get the same effect as before. | Yes | No |
| 12. Sometimes I have awakened during the night or early morning sweating all over because of drinking. | Yes | No |
| 13. I stayed intoxicated for several days at a time. | Yes | No |

APPENDIX H

Physical Health Symptoms

Please read each item in the list carefully. Indicate how much you have been bothered by each symptom during the past week, including today.

1	2	3	4
Not at all	Mildly, it did not bother me much	Moderately, it was very unpleasant but I could stand it	Severely, I could barely stand it

1. Numbness or tingling in parts of your body
2. Dizzy or lightheaded
3. Hands trembling
4. Difficulty breathing
5. Indigestion or discomfort in your stomach
6. Faint
7. Trouble sleeping
8. Headaches
9. Back pain
10. Painful bowel movements
11. Soreness in your muscles
12. A lump in your throat
13. Weakness in parts of your body
14. Heavy feelings in your arms or legs
15. Pains in heart or chest
16. Unusual vaginal discharge or bleeding
17. Premenstrual syndrome (PMS)
18. Painful menstrual periods
19. Excessive bleeding with menstrual periods
20. Pain in your pelvic area
21. Pain or discomfort when having sex

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ABSTRACT**SEXUAL ASSAULT SEVERITY AND HEALTH OUTCOMES AMONG AFRICAN AMERICAN AND CAUCASIAN VICTIMS**

by

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Although they share many similarities in their recovery outcomes, African American and Caucasian victims likely differ in their conceptualizations of and responses to sexual assault. However, few studies have examined post-assault health outcomes based on ethnicity. Using Neville and Heppner's (1999) culturally inclusive ecological model, this study contributes to this gap in the literature with a community sample of 221 sexual assault victims. Although the path model was generally similar for African American and Caucasian women, there were notable differences. Multi-group comparison analysis indicated that ethnicity moderated the relationship between assault severity and depressive symptoms, such that the relationship was stronger for African Americans. In addition, ethnicity moderated the relationship between PTSD symptoms and drinking problems. Whereas PTSD symptoms significantly predicted drinking problems among African Americans, this relationship was not significant for Caucasians. These findings highlight the importance of implementing culturally competent training programs for practitioners and community agencies.

AUTOBIOGRAPHICAL STATEMENT

Sheri E. Pegram graduated from Virginia Polytechnic Institute and State University, Blacksburg, Virginia, in 2010 with a Bachelor of Science in Psychology. She is currently a doctoral student at Wayne State University working toward a degree in Social/ Health Psychology with a concentration in Quantitative Methods. Her research interests focus on etiological factors in sexual assault perpetration. Specifically, she is interested in understanding how alcohol interacts with individual and situational factors to predict sexual aggression. She also is interested in the effects of sexual assault victimization on women's mental and physical health.