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A Cross-Sectional and Longitudinal Examination of Adjustment and Coping in Female Undergraduates in Response to Sexual Coercion

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A CROSS-SECTIONAL AND LONGITUDINAL EXAMINATION OF ADJUSTMENT AND COPING IN FEMALE UNDERGRADUATES IN RESPONSE TO SEXUAL COERCION

by

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(Chairperson)

This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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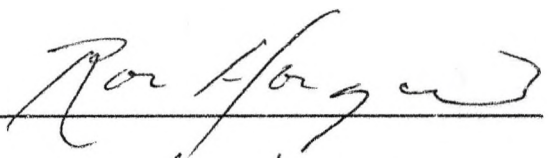
Signature 

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ABSTRACT

The present study is a cross-sectional and longitudinal examination of psychological adjustment and coping in female undergraduates in response to unwanted sexual intercourse before and during their first year of college. This study represents an important contribution because of its longitudinal and prospective design. It also is one of the first studies to examine the Sense of Coherence (SOC) construct in women reporting unwanted sexual intercourse.

Questionnaires were mailed to the entire class of incoming women at a Northern Plains state university at the beginning of the 1993-94 academic year (N = 778). Over half of these women responded (n = 411) to the first mailing, and the two subsequent mailings netted 249 (63%) and 246 (62%) respondents, respectively. These samples permitted estimates of prevalence and incidence rates of unwanted sexual experiences.

Concurrent prediction using multiple regression analysis revealed that SOC predicted General Severity Index (GSI) scores from the Brief Symptom Inventory in women reporting an incident of unwanted sexual intercourse (USI group) prior to beginning college, while incident variables

(e.g., degree of force used by the man) did not make significant contributions to the prediction. At the first assessment, the USI group differed from women who denied any type of unwanted sexual contact (NSC group) on their SOC scores and GSI scores, although the latter difference was of questionable clinical significance. This study found that making a distinction on the type of coercion (e.g., verbal vs. physical) did not affect psychological adjustment. It also found that the NSC group's expectations about how they would cope with a sexually coercive event differed from the USI group's actual report of coping behaviors they had used after such an incident. The prospective analysis revealed that only pre-incident GSI scores were able to contribute significantly to the prediction of post-incident GSI among women reporting unwanted sexual intercourse during the course of this study.

These findings emphasize the importance of controlling for pre-incident adjustment when examining adjustment and coping after sexually coercive incidents. It also offers some preliminary evidence that SOC may be an important variable to examine in this population.

INTRODUCTION

Rape Incidence & Prevalence

Women in the United States are at risk of being victims of a sexual assault, though the degree of risk and the scope of the problem remain controversial. Many researchers concede that official incidence and prevalence rates calculated from government crime reports likely underestimate the extent of the problem (e.g., Koss, 1992; Mynatt & Allgeier, 1990). Incidence refers to the number of cases occurring within a specified amount of time, usually one year. It is often expressed in terms of a victimization rate, which is the incidence divided by the population. Prevalence refers to the percentage of the population that will be victimized during the course of their life (McCann, Sakheim, & Abrahamson, 1988).

Underestimates of a crime such as rape are not unexpected given that such underestimates depend on victim self-disclosure of an event that society views very negatively (Koss, 1992). However, data collection methods of the National Crime Survey (NCS) and the Uniform Crime Reports (UCR) are likely to further contribute to problems associated with estimating prevalence and incidence rates.

First, the definition used by UCR has been overly narrow. It has excluded forms of penetration other than penile-vaginal penetration, intercourse with girls below statutory age of consent, offenses by legal and common-law spouses, and non-forcible rapes of incapacitated victims. Second, the UCR refers only to those crimes that are reported to police, and there are estimates that there are 3 to 10 rapes committed for each rape that is reported (Koss, Gidycz, & Wisniewski, 1987). Gray, Lesser, Rebach, Hooks, and Bounds (1988) in a survey of female students from two, small, 4-year colleges and a community college (N = 301) found that only 22 percent of rape victims (n = 36) reported the event to an authority figure, supporting the idea that some correction factor for UCR figures is in order. They note that victims chose to tell friends much more frequently than the authorities (61 percent told female friends, 36 percent told male friends). Mynatt and Allgeier (1990) might place estimates even higher since they found that only 6 percent of attempted rape and rape victims (n = 52) from their sample of female undergraduates (N = 125) reported sexual assault to authorities. Copenhaver and Grauerholz (1991) found that reports to authorities were even lower among sorority members. In their sample of sorority members from a large midwestern university (N = 140), they found that among victims of rape or attempted rape only 2 percent

reported it to police. As with Gray et al.'s finding, most victims told friends (64 percent), though a significant number (33 percent) told no one about the rape or attempted rape. Copenhaver and Grauerholz (1991) speculate that failure to report incidents to police is explained in part by the fact that only 36 percent of the women who had experienced what legally is defined as rape (n = 24), viewed it as such. The rest were either unsure or did not believe they had been raped.

In an attempt to estimate unreported crimes, the NCS interviews a sample of households every six months, but this method of estimating the incidence and prevalence of rape has also been criticized. Koss (1992) identified at least six methodological problems with the NCS including lack of confidentiality and unskilled interviewers. Given the problems described, its not surprising that estimates of incidence vary widely. The 1990 UCR victimization rate estimates were .8 per 1000 (as cited in Koss, 1992). The 1989 NCS victimization rate estimates were 1.2 per 1000 women and girls (as cited in Koss, 1992).

In contrast, Koss et al. (1987) reported a victimization rate (women who reported a sexual experience that met the legal definition of rape or attempted rape) of 83 per 1000 college women over a period of six months, the same time interval used in NCS estimates (i.e., 166 per

1000, or a rate of 16.6 percent over a 12 month period). When using the narrower NCS definition of rape, their estimate drops to 38 per 1000, which is still approximately 10 times greater than the six month NSC estimates, which are 3.9 per 1000 for women age 16 to 19 and 2.5 per 1000 for women age 20 to 24. Although it is important to point out that the NSC sample is intended to represent the US population as a whole, compared with Koss et al.'s (1987) sample of college women, Koss and her colleagues speculate that among women who are not in a post-secondary school, victimization rates may actually be higher. They point out an inverse relationship between victimization rates and income and since their subjects came from families with mean incomes between $25,000 and $35,000, they believe that non-students, likely being from poorer families, will probably experience higher victimization rates.

Estimates by other researchers vary some from estimates made by Koss et al. (1987), which in part can be attributed to different samples and/or different definitions of rape and sexual coercion. However, most other estimates are still closer to Koss and colleagues' calculations than to the NCS statistics. For example, Yegidis (1986) found an incidence rate of about 10 percent of college women (N = 348) from an urban university reporting a forced sexual encounter (e.g., fondling, oral sex, intercourse, and other

activities) in the past year, with 50 percent of the victim subsample claiming either forced oral sex or intercourse. This number does not reflect attempted rapes, but neither is there a distinction between physical or verbal coercion, as there is in Koss et al.'s data.

With respect to prevalence, Koss et al. (1987) found that 27.5 percent of a large national sample (N = 3187) of college women reported at least one experience of rape or attempted rape since the age of 14. Another study found 24 percent of women (N = 930) in the San Francisco area had experienced at least one rape during their lifetime (Russell, 1984). Mynatt and Allgeier (1990) found that 42 percent of their sample of college women (N = 125) reported one or more sexually coercive incidents, with 26 percent experiencing forced sexual intercourse, oral or anal sex.

In addition to underestimates of absolute rates, Koss (1992) also believes that rape is likely to occur between acquaintances much more frequently than previously believed. She estimated that rape by an acquaintance is four times more likely than by a stranger. There are several studies that support Koss's estimate. These studies found that only 5 to 10 percent of women claimed they were raped by a total stranger (Copenhaver & Grauerholz, 1991; Gray et al., 1988; Mynatt & Allgeier, 1990). In many cases, not only were assailants not strangers, but may have been relatively well

known by their victims, which has legal implications for conviction of rape charges. For example, Yegidis (1986) found that 11 percent of women in her sample of college students (N = 348) had experienced forced sexual intercourse or oral sex by a date. Most of these women were coerced into sexual encounters through verbal persuasion or protests. Thus, because the women had consented to the date and because of the lack of the threat or actual use of physical force, the victim is often suspected of consenting to the sexual encounter. As Harris and Parsons (1985) point out, sexual assault cases rely heavily on evidence that the victim did not consent to the assailants advances, which typically means there needs to be evidence of victim resistance.

Gray et al. (1988) reported prevalence rates for rape (forced sexual intercourse or sexual acts through threats of or actual physical force) on three rural east Maryland college campuses (N = 301) to be 12 percent, 21 percent experienced attempted rape, and 33 percent reported engaging in sexual intercourse when they did not want to after being manipulated (e.g., threats of ending the relationship, continual arguments). Muehlenhard and Linton (1987) reported that 77.6 percent of their sample of college women (N = 341) had been involved in some type of sexual aggression, and 14.7 percent in unwanted sexual intercourse.

Although it is reasonable to speculate that victimization rates are higher among young women not attending college (Koss et al., 1987), among college women there is evidence that first-year students are particularly susceptible to violent behavior. One study reported that 27 percent of a combined sample of college men and women (N = 800) reported violence during their first year in college, while only 11 percent reported a similar experience during their senior year of high school (Aizenman & Kelley, 1988). Of the women (n =400), 22 percent claimed to have experienced acquaintance rape and 29 percent had been forced to have sexual intercourse against their will.

Gray et al. (1988) reported that 59 percent of their rape victims reported the rape or rapes had occurred after graduation from high school, with more than half of this group reporting they had been victimized prior to beginning college. They noted that in their sample that combined students from two, four-year schools and one community college, the average length of time between high school and college was considerably longer for students from the community college than for the four-year schools. Gray et al. explained that this may account for the high percentage of women (32 percent) who experienced rape between high school graduation and the start of college.

In addition to higher levels of sexual assault soon after high school graduation, the incidence of sexual coercion may be higher in women involved in college sororities. Copenhaver and Grauerholz (1991) surveyed sorority members (N = 140) using the Sexual Experiences Survey (Koss & Oros, 1982). Their findings have limited ability to generalize to college women in general since their sample was very homogeneous, though it may be typical of women who are members of sororities. Their sample was 99 percent white and 62 percent reported annual incomes for their parents of $50,000 or more. They found that half of the women had experienced at least one act of sexual aggression, of which 83 percent had experienced at least one act during their college years. In all 140 subjects surveyed, 24 percent reported at least one attempted rape, 18 percent reported instances of sexual coercion, and 17 percent reported incidents that met the legal definition of rape. Many women reported multiple experiences with victimization, the mean number of incidents was 2.5 per person. Although Copenhaver and Grauerholz (1991) concede that they cannot say definitively whether sorority members are really at higher risk than the general college population (see Koss et al., 1987), it is clear that they are becoming victims of sexually coercive acts at high rates.

Post-Rape Adjustment

Given that rape and other forms of sexual coercion are occurring at a fairly high rate, it follows that real change in incidence and prevalence will not come about until there are interventions to change the behavior of the man. However, in addition to the necessity of exploring ways to prevent sexual assault, there is an equally important obligation to help those who are survivors of sexual assault. Thus, it appears worthwhile to explore adjustment and coping in women who have been sexually victimized with the following question in mind: What assists women in dealing with, adjusting to, and/or recovering from sexual victimization? The following reviews the literature associated with post-rape adjustment.

Impact of Rape

Lenox and Gannon (1983) have described a cluster of symptoms seen in post-rape victims that they label Rape Trauma Syndrome. They note that researchers typically divide this syndrome into two or three phases. The first phase is the acute phase and lasts from a few days to a few weeks. The over-riding theme is one of disorganization. Early after the rape there are likely to be somatic complaints depending on the degree of force used, and the victim typically expresses feeling "unclean" and ashamed of what has happened.

In their review, Lenox and Gannon (1983) noted that although most researchers describe two phases, there is a group that describes a middle stage. It is during this time that the victim may appear to make an adjustment and resume normal functioning. However, she is actually experiencing psychological problems. It is during this phase when victims are not finding ways to express anger outwardly. Lenox and Gannon (1983) indicated that many women may never get beyond this stage of adjustment.

For other women, movement into the third phase is marked by depression, often in response to reliving the rape, which may take the form of flashbacks and nightmares. She may retell the incident, and although this process is probably helpful to the victim, it may cause problems with friends and family who have to listen to the incident repeatedly (Lenox & Gannon, 1983). This stage can be fairly long-term and is not completed until these problems are no longer present.

Resick, Veronen, Kilpatrick, Calhoun, and Atkeson (1986) offer a far more simplified view of the rape aftermath. They identified fear and anxiety as the longest lasting and most prominent reaction to sexual assault, and discount theoretical speculation that assault victims' reactions can be described using crisis theory (e.g., Burgess & Holmstrom, 1974; Sales, Baum, & Shore, 1984).

Regardless of the most prominent feature or the course post-rape adjustment takes, most researchers acknowledge the long-term impact of rape. Cohen and Roth (1987) reported that the effects of rape impact functioning years after the event and stated that longitudinal designs to study the aftermath of rape are indicated.

The impact of rape can be seen among victims seeking mental health services. Kilpatrick (1983) noted that although only 15 percent of sexual assault victims sought professional help specifically related to the rape, 32 percent of victims had sought professional psychological assistance at some time with the majority of these (70 percent) doing so after the victimization. He also found more mental health problems among victims compared with non-victims. Among victims, 33 percent had considered suicide and 11 percent had actually made suicide attempts compared to 7 percent and 2 percent, respectively, for non-victims.

Murphy et al. (1988) found that rape had a significant impact on victims' self-esteem in a two-year longitudinal study. Victims had significantly lower self-esteem than comparable non-victims. They also showed less optimism about their future, less overall satisfaction from life, and their relationships with their parents were less favorable than non-victims.

Rynd (1988) reported greater frequency and severity of somatic complaints in her sample of rape victims (n = 34) when compared with non-victim controls (n = 34). There was also a positive correlation between the perceived severity of the assault and the frequency and severity of the somatic symptoms. Finally, lowered levels of sexual satisfaction were also related to higher frequency and severity of somatic symptoms.

Becker, Skinner, Abel, and Cichon (1986) also found problems with sexual functioning among sexual assault victims. In a comparison between sexual assault victims (n = 372) and women denying sexual assault (n = 99), Becker et al. (1986) found that nearly 60 percent of assault victims were experiencing sexual problems, 71 percent of which attributed their problems to the assault. Fewer than 20 percent of non-victims reported sexual difficulties, and the types of problems experienced by this latter group were different than those experienced by the victims. Sexual assault survivors were more likely to experience "early-response-cycle-inhibiting problems" (pp. 42-43) defined as fear of sex, arousal dysfunction, and desire dysfunction (Becker et al., 1986). Using the Sexual Arousability Inventory (Hoon, Hoon, & Wincze, 1976, as cited in Becker et al., 1986), they found a significant relationship between levels of sexual functioning and

educational level, such that among the sexually functional survivors, higher educational levels were associated with greater levels of arousability. It is important to note that because 30 percent of their sample of sexual assault survivors were referred by medical and other clinical agencies, Becker et al. rightly cautioned that their finding that nearly 60 percent are experiencing sexual problems may be a high estimate.

Waigandt, Wallace, Phelps, and Miller's (1990) comparison between equal groups of rape victims (n = 51) and non-victims (n = 51) revealed significant differences between these two groups on perceived health status, and three of the five measures from the Cornell Medical Index-Health Questionnaire (Present Illness Symptoms, Negative Health Behaviors, and Female Reproductive Physiology Illness Symptoms). More than three times as many non-victims as victims viewed their health as "excellent," while many more victims than non-victims reported "fair" or "poor" health. These differences are clarified when the significant subcategories of the Cornell Medical Index-Health Questionnaire are examined. Present Illness Symptoms, consisting of items such as high blood pressure, frequent or severe colds, headaches, stomach, back and chest pains showed mean scores for victims that were twice those of non-victims. Negative Health Behaviors includes items

such as lack of exercise, excessive alcohol and caffeine intake, and smoking. Victims reported 50 percent more of these behaviors than did non-victims. The Female Reproductive Physiology Illness Symptoms scale revealed that victims had pain during menstrual periods, vaginal discharge, frequent urination and pain during urination more frequently than non-victims. Thus, not only is there evidence that long-lasting psychological problems are associated with experiencing rape, but there is also a relationship between rape and long-term disruptions in physical health.

Lenox and Gannon (1983) reported that demographic factors influenced recovery. Women between the ages of 18 and the mid-twenties showed the greatest difficulty with adjustment. Cohen and Roth (1987) also found a relationship between the frequency of symptoms in their sample and age. Older women at the time of their study reported fewer symptoms. Other variables Lenox and Gannon (1983) examined included marital status and education. Women who were married seemed to be more negatively affected and the level of education was found to be inversely related to the number of problems.

Unlike most studies that have attributed observed differences between responses of victims and non-victims to assault aftermath, Myers, Templer, and Brown (1984) claimed

differences they found between victims and non-victims had existed prior to the rape. Their study compared differences between women who had been raped within the past year (n = 72) and women who had never been raped (n = 72). They described a typical woman from their sample of rape victims as "limited in her ability to act in her own best interest, to stand up for herself, and to protect her own rights when they are threatened by others, and who is unlikely to be dominant in her interpersonal relationships or to be persistent and persuasive in attempting to meet her own needs or attain her own goals" (p. 76). They were careful to point out that they are not suggesting these traits elicited rape, but rather that the perpetrator selects his victims on the basis of vulnerability. However, Myers et al.'s contention that these differences existed prior to the rape is questionable. All data were collected post-rape and rape victims were asked to imagine how they would have responded before they were raped. The lack of pre-rape data makes distinctions between victims and non-victims weak at best, even if we accept the assumption that rape is a non-random event. These differences may simply be a reflection of the impact of the rape.

Assault Characteristics

Cohen and Roth (1987) found a positive relationship between the severity of symptoms in their sample of rape

victims and the force used during the rape, as well as the victim's history of prior sexual assault. They also found prior victimization to be related with greater overall symptomatology.

Interestingly, in Lenox and Gannon's (1983) review, they reported that both high and low levels of violence seem to be negatively related to adjustment. Intense fear following a violent rape may prove debilitating, while if there were very low levels of violence the victim may feel she "gave in" unnecessarily. With respect to high levels of violence, Bownes, O'Gorman, and Sayers (1991) found evidence for a negative relationship between the level of violence and adjustment. They found that 70 percent of their sample (N = 51) met diagnostic criteria for Post-Traumatic Stress Syndrome (PTSD) as defined in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III). In their subsequent comparison of PTSD and non-PTSD victims, Bownes et al. (1991) found that the PTSD group reported greater use of brutal force during the rape, such as, punching, kicking, and choking, (24% vs. 6%), more frequent displays of a weapon (22% vs. 0%) and severe physical injury (30% vs. 7%) more often than non-PTSD assault survivors. These two groups were not significantly different in age, marital status, employment status, number of recent life events, or family history of psychiatric illness.

The perceived deviance of the sex act also appears related to a victim's post-assault adjustment, with sexual acts that were perceived as more deviant (e.g., fellatio, cunnilingus, or rectal intercourse) associated with poorer adjustment (Lenox & Gannon, 1983). Mynatt and Allgeier (1990) found that women who were coerced by physical force, who rejected the use of interpersonal violence, and who had less physical injury reported fewer adjustment problems. These results may seem contradictory at first, but they make sense in the context of Gannon and Lenox's report. The use of physical force during the assault likely assists in the lessening of any feeling by the victim that she gave in unnecessarily, while fewer physical injuries suggest a relatively less physically assaultive event.

The degree to which the victim is acquainted with her assailant also appears to affect her post-rape adjustment. Lenox and Gannon (1983) reported that if the victim knew her assailant, she was more likely to experience negative feelings toward all men. Also, if the victim knew her assailant she was more likely to feel blamed for the rape. It seems that sexual assault by an acquaintance leads to a sense of betrayal that affects the victim's feelings and relationships with other men in a negative manner. Although Lenox and Gannon's report indicates a more negative outcome from acquaintance rape, rape by strangers is also very

damaging. Bownes et al. (1991) found that rape survivors who met diagnostic criteria for PTSD were more likely to have been raped by a stranger (72% vs. 27%) than survivors not suffering from PTSD. Said another way, most women raped by a stranger experienced PTSD symptoms. In sum, though both rape by strangers and acquaintances are associated with adjustment difficulties, rape by a stranger appears more likely to result in clinical levels of pathology.

Marhoefer-Dvorak, Resick, Hutter, and Girelli (1988) examined differences between single- (n = 36) and multiple-incident (n = 16) rape victims who did not have a history for incest. They did not find differences between these groups in terms of post-rape psychological functioning. Interestingly, when they combined single-incident rape women who had a history of other types of major victimization with the multiple-incident rape victims and then compared this new group (n = 29) with the remaining single-incident rape victims (n = 23), they found that the former group reported being more assertive as well as having more somatic symptoms than the latter group. They note that although their findings run contrary to a similar comparison by Burgess and Holmstrom (1978), the difference is likely due to the fact that Burgess and Holmstrom included incest victims in their sample of women with a history of multiple-incident rapes. They conclude that

incest may be a confounding variable, since incest victims generally tend to show poorer psychological adjustment. Marhoefer-Dvorak et al. further suggest the importance of examining time between victimizations in predicting post-rape adjustment.

In contrast to findings about assault characteristics, Girelli, Resick, Marhoefer-Dvorak, and Hutter (1986) found that subjective distress was a better predictor of subsequent fear than degree of violence associated with the rape. However, they do note that they used a relatively small sample size (N = 41) relative to the number of predictor variables. The subjective emotional experience of the victim was related to some measures of fear and anxiety (e.g., Phobic Anxiety of the SCL-90-R, the vulnerability scale of the Veronen-Kilpatrick Modified Fear Survey, and avoidance subscale of the Impact of Events Scales). Girelli et al. (1986) speculated that greater emotional distress during sexual assault results in greater levels of fear that are maintained through avoidance. The question their study, as well as the others discussed above, does not answer is the way in which coping styles or strategies may mediate avoidance reactions and other post-rape adjustment processes.

Coping Behaviors

Burgess and Holmstrom (1979) examined rape victims' (N = 81) subjective reports of recovery 4 to 6 years after the incident. They found that three-fourths of their sample reported they had recovered at follow-up. Half of the recovered sample indicated they recovered within months, the other half reported it took several years. They found that women who consciously used coping behaviors recovered from rape more quickly than women who were not actively trying to cope. In fact, among the 21 non-recovered victims at the 4 to 6 year follow-up, only 5 reported using a deliberate coping strategy. Among women actively employing a coping strategy, they found that several were at least somewhat successful in the recovery process.

Women who were able to offer a rational or logical reason for their rape showed a quicker recovery when compared with women who could not identify a cause. Of the women employing this strategy, 20 had recovered in months, 13 in years, and 4 were not yet recovered. Women who used cognitive minimization of the frightening aspects of the rape also reported quicker recovery than those not using such a technique: ten of the women had recovered in months and 7 in years. Some women coped by suppressing the memory of the rape. Of the women using this strategy, 8 had recovered in months and 8 in years. Another coping strategy

used by some women was dramatization, which involved repeatedly over-expressing their anxiety. Using this technique, 4 had recovered in months, 4 in years and 1 had not yet recovered. Faster recovery also appeared to be related with victims taking increased behavioral action (e.g., moving, traveling, changing phone number). Among the women taking increased action, 45 percent had recovered in months, while decreased action resulted in a recovery that took at least years. Of those that had decreased their action after the rape, half were still not recovered at the follow-up (Burgess & Holmstrom, 1979).

Some of the victims reported that their "coping" techniques had included suicidal thoughts or attempts and alcohol or drug abuse. Nine of the 21 women not yet recovered had used such strategies, while none of the women who reported that they had recovered in months had resorted to these maladaptive coping behaviors (Burgess & Holmstrom, 1979). Thus, those things that a woman chooses to do or not to do after sexual victimization are related to the woman's subjective perception of her recovery.

Burt and Katz (1988) speculate that expressive behaviors (e.g., expressing feelings with others, allowing self to experience emotions, taking steps to make positive life changes) are a "more constructive" coping style than other strategies such as avoidance (e.g., sleeping a lot,

avoiding reminders, ignoring thoughts about the rape), engaging in nervous behaviors (e.g., changing habits, crying, screaming, giggling by yourself, eating or smoking more than usual, staying inside), cognitive strategies (e.g., trying to rethink the situation, learning more about sexual assault, analyzing the rape), and self-destructive behaviors (e.g., drinking or using drugs, suicidal thoughts, self-blame). In another study Katz and Burt (1988) found that expressive strategies were the only coping styles not related to measures of generalized guilt and self-blame. In contrast, Cohen and Roth (1987) found that neither approach nor avoidance measures were related to positive outcomes, both were associated with poor outcomes, though outcomes were worse for avoidance. Finally, Meyer and Taylor (1986) found stress reduction to be the only strategy associated with better post-rape adjustment, but cautioned that without information on pre-rape adjustment, it is unknown whether it was this coping strategy that actually lead to better adjustment.

Although there were some women in the above studies who incorporated ways of dealing with rape that were clearly detrimental (e.g., suicidal thoughts or attempts, alcohol and/or drug abuse), other women used strategies such as active and expressive coping behaviors that were associated with better post-rape adjustment and quicker recovery. In

the coping literature, however, many researchers believe that no single style of coping can be identified as the "best" in all circumstances. For example, Lazarus (1990) cautions against putting too much stock in a particular style of coping, but rather encouraged examination of the following question when considering coping styles: "Which forms of coping, in which persons, and under which conditions, result in positive and negative short- and long-term adaptational outcomes?" (p. 100). In other words, individual differences need to be considered when looking for the best match between a coping strategy and a specific stressor. Thus, it follows that more important than identifying the "best" coping strategy, may be to discourage those that are clearly dysfunctional. Finally, consideration of pre-rape adjustment is critical in determining which coping strategies are associated with which outcomes.

Victim Attributions

Lenox and Gannon (1983) theorized that attributions may also be related to post-rape recovery. They described women who make internal attributions as those who blame themselves for the rape, while those who make external attributions would be more apt to blame others. One might expect internal attributions to be associated with a protracted recovery, as self-blame leads to guilt and low self-esteem.

In contrast, Lenox and Gannon point to the literature on learned helplessness, which postulates that lack of control over important life events leads to psychological problems, particularly depression. Lenox and Gannon came to the conclusion that both attribution styles were potentially problematic, with internal attributions leading to guilt and external attributions leading to depression.

Meyer and Taylor (1986) looked primarily at internal attributions by making the distinction between behavioral and characterological self-blame based on research done by Janoff-Bulman (1979). Behavioral self-blame refers to assigning blame to modifiable behaviors (e.g., locking doors, not walking alone), while characterological self-blame refers to blaming stable traits (e.g., "I'm too trusting"). The difference between these two can be explained by the blamer's perception of whether the object of blame can be changed. Meyer and Taylor, however, found both behavioral and characterological self-blame to be related to poor post-rape adjustment. In their sample of rape victims who had contacted a rape crisis center (N =58), behavioral self-blame was associated with depression and sexual dissatisfaction, and characterological self-blame was associated with depression and high levels of fear. This study did not find an adaptive pattern of causal attributions for victims of rape. Nor was the study able to

conclude that precautionary behavior strategies (e.g., locking doors) were associated with better adjustment. Finally, this study also did not support a competing theory that precautionary strategies would be associated with excessive fear and anxiety, and thus, worse adjustment.

Frazier (1990) also examined victim attributions in a sample of rape (vaginal, oral, or anal intercourse) victims (N = 67) in which more than half were assaulted by strangers (56 percent). The women in the sample were primarily white (81 percent), with some previous sexual victimization (40 percent reported prior rape and 27 percent incest). Similar to Meyer and Taylor's (1986) findings, this study did not find support for Janoff-Bulman's (1979) theory that better post-rape adjustment would be associated with behavioral self-blame rather than characterological self-blame. Subjects' modal response was to not blame the self at all, but other factors, and subjects that did blame the self, tended to blame both characterological and behavioral factors. Thus, characterological and behavioral self-blame were related in most subjects, and given the lack of distinction between types of self-blame, it is not surprising that both showed a relationship to poorer adjustment. In fact, Frazier (1990) found that women's attributions about the causes of rape as measured by 15 statements that subjects rated on a five point scale (e.g.,

"I should have been more cautious" 1 = "completely false"; 5 = "completely true") accounted for 67 percent of the variance in 3 days post-rape depression (on the Beck Depression Inventory). Frazier also found that attributions predict depression at 3 to 6 weeks and at 3 to 12 months.

Hill and Zautra (1989) found that among rape victims (N = 36), characterological self-blame was the best predictor of demoralization (the Demoralization composite from the Psychiatric Epidemiology Research Interview was used as their measure of psychological distress). Interestingly, adjustment was not related to women's perceptions of being able to change their self-blame (characterological or behavioral). That is, women believing they could change the cause of the rape (e.g., by making behavioral or characterological changes) were neither more nor less demoralized than women who did not believe they could make changes. They also found that women who thought they were more likely than the average person to be raped again in the future showed greater anxiety, feelings of helplessness, and problems with self-esteem (Hill & Zautra, 1989).

In summary, although both internal and external attributions for rape are theoretically capable of contributing to post-rape adjustment difficulties via different paths, much of the research has explored the distinctions within internal causal attributions, or

self-blame. Janoff-Bulman (1979) theorized that better post-rape adjustment would be associated with behavioral self-blame rather than characterological self-blame, primarily because behaviors were more likely to be viewed as capable of being changed than character traits. Much of the work exploring this distinction has not found support for Janoff-Bulman's theory. Results from this research has found that any type of self-blame is associated with greater levels of depression. Thus, although the current research does not appear to offer support for Janoff-Bulman's theory, it is important to note that the distinction between characterological and behavioral self-blame may be more evident among women who experience rapes perpetrated by acquaintances. As reported above, victims who knew their assailant were more likely to feel blamed (Lenox & Gannon, 1983), and since most of the victims in the studies exploring the distinction between the two types of self-blame were assaulted by strangers (56 percent of the victims in Frazier, 1990 and 83 percent of the victims in Meyer & Taylor, 1986), this may explain why Janoff-Bulman's theory was not supported. Clearly, further exploration of this issue is in order.

Social Support

Sexual assault victims showed better recovery when they had social support compared with women who were alone,

though in many instances the social support networks may become severely strained or even collapse altogether and the collapse of social support is associated with isolation and distress (Flannery, 1990).

Golding, Siegel, Sorenson, Burnam, and Stein (1989) found that more than two-thirds of their sample (69.4 percent) of sexual assault victims (N = 290) told someone about the assault. Those that were emotionally upset and/or had been assaulted by a stranger, were significantly more likely to tell someone. Most individuals spoke with a friend or relative and most found at least one person helpful. Rape crisis centers were considered helpful, though contacted only by a small minority of the victims.

Cohen and Roth (1987) found a relationship between the severity of psychological symptoms and the reporting of the rape to police as well as the length of time before confiding in someone. Better overall adjustment, as measured by the SCL-90-R, and lower scores on the Modified Fear Survey (Kilpatrick & Veronen, 1983) were found in women who reported rapes to police. Women who took less time to confide in another person about the rape also had better overall adjustment, in addition to better overall, parental, and family unit adjustment, as measured by the Social Adjustment Scale Self-Report (Weissman, Prusoff, Thompson, Harding, & Meyers, 1978, as cited in Cohen & Roth, 1987).

Seeking professional help (without distinction for crisis line or psychotherapist) was associated with fewer intrusions (as measured by the Intrusion subscale of the Impact of Event Scale; Zilberg, Weiss, & Horowitz, 1982, as cited in Cohen & Roth, 1987).

Popiel and Susskind (1985) took an in-depth look at a fairly small group of rape (N = 25) victims and found that victims rated their female friends as the most supportive. Victims did not always view male partners (i.e., boyfriends and husbands) as adequately supportive and among professionals, police were generally viewed as helpful, but physicians were criticized as unsupportive. Interestingly, a measure of overall support (a measure combining perceived social support from ten different sources, such as friends, family, professionals) was not found to be a predictor of later adjustment. Only when they looked at correlations between individual sources of support and adjustment did they find a significant relationship. They found a positive correlation between their measures of adjustment (SCL-90-R and Impact of Events scale) and the rating of support from physicians, suggesting the lack of perceived support from physicians was associated with poorer adjustment. Thus, the lack of support was more important in predicting adjustment than was its perceived availability.

Popiel and Susskind (1985) also found that women who survived a completed rape experienced more support than those who survived an attempted rape, though women in both groups had similar elevations on the measures of adjustment. They attributed these differences to the fact that individuals who are perceived to be more stressed receive more support. However, given the fact that both showed poor adjustment, Popiel and Susskind believe that coping with attempted rape is at least as stressful as completed rape, and has the potential to be even more stressful given the relative lack of support.

Moss, Frank, and Anderson, (1990) reported that marital status did not significantly affect psychological symptoms (depression, fear, anxiety, and self-esteem) following rape. As with Popiel and Susskind (1985), the perceived lack of support was related to poorer adjustment. Moss et al. (1990) found that married individuals expecting partner support, yet not receiving it showed poor adjustment. A perceived negative relationship with a spouse was found to be related to poorer psychological functioning following rape. This effect is even more pronounced when the woman feels let down by her spouse's lack of support.

Davis, Brickman, and Baker (1991) also found unsupportive behavior by significant others to be related to post-victimization adjustment. They examined women who were

victims of rape, attempted rape, or aggravated sexual assault (N = 105), but excluded women if the assailant was a family or household member, or a current romantic partner. Their sample was predominately black (60 percent) and from a low socioeconomic strata (45 percent reported annual incomes of $10,000 or less, and 58 percent had no more than a high school education). Davis et al. (1991) measured supportive and unsupportive behavior with the Crime Impact Social Support Inventory (CISSI), a 42-item instrument they developed, reflecting possible behaviors that a significant other might display after the sexual assault. Analyses showed a significant relationship between unsupportive behavior and the global score on the SCL-90. Greater amounts of unsupportive behavior resulted in worse adjustment. Interestingly, supportive behaviors by others was not found to be significantly related to better adjustment, in fact the trend was in the opposite direction. Similar to Popiel and Susskind (1985), Davis et al. (1991) believed this finding reflects the fact that those with the worst adjustment were able to elicit more supportive behavior than those less distressed. Thus, they concede that poorly adjusted individuals may also elicit greater unsupportive behavior as well, or may perceive the behaviors of their significant other as unsupportive.

In conclusion, social support appears to play a role in post-rape adjustment. Women who reported being emotionally upset were more likely to talk with someone, most often a friend, and speaking with someone soon after the rape was associated with better adjustment. However, despite the evidence that supportive behaviors by others are associated with better adjustment, many studies actually found a stronger negative relationship with a lack of expected support. This negative relationship may be particularly relevant to survivors of attempted rape who tend to receive less support than rape victims. Furthermore, it also may explain why women who have exhausted their social support resources experience poorer adjustment.

Summary

Incidence and prevalence rates for rape and other forms of sexual victimization vary widely but appear to be grossly underestimated by official reports such as the UCR and the NCS. Despite the various difficulties in accurately determining incidence and prevalence rates, there is strong evidence that these rates are highest among women in high school and college, suggesting further exploration with these populations is in order.

The consequences of sexual victimization can be devastating, resulting in a protracted recovery that can last for several years. Rape takes its toll in several

areas of functioning including mental and physical health, sexual arousal, and interpersonal relationships. For example, suicide and suicide attempts are more likely among rape victims along with greater levels of depression and more somatic complaints, including general body aches and problems specific to female sexual functioning. However, Esper (1986) cautioned that simply the presentation of symptoms does not suggest poor adjustment. She encouraged viewing post-rape adjustment as normal adjustment to a traumatic and violent event. But even if symptoms in rape victims are not viewed as pathological, there are wide variations in individual responses to sexual victimization. Thus, it is important to explore the factors that are related to post-rape adjustment such as coping behaviors, assault characteristics, victim attributions, and social support.

Women who are expressive and active rather than inactive in their coping response appear to benefit from a quicker recovery, though the research is mixed. The main difficulty with linking coping behaviors to level of adjustment is that without data on adjustment before the rape, it is impossible to develop a causal relationship.

Characteristics of the assault have been shown to be related to adjustment in some studies, though the details of these relationships are not particularly clear. For

example, the degree of force used by the assailant does not seem to show a simple relationship with adjustment. Physical violence is associated with greater adjustment problems, but when little or no violence is used, the victim is more likely to blame herself for not offering a sufficient level of resistance.

In theory, women who engage in characterological self-blame about rape will show poorer adjustment than those who make behavioral attributions, presumably because the latter are more readily modified. However, to date these distinctions between types of internal attributions have not been supported and studies have found nothing further than a general relationship between self-blame and poor adjustment.

The literature has suggested that social support is an important factor in the recovery process with studies associating better support with quicker recovery, especially if the victim confides in someone fairly soon after the rape. However, social support is not a simple process to understand. For example, simply having a spouse to confide in did not necessarily result in better adjustment. A spouse who did not provide the support expected by the victim was associated with poorer adjustment. In addition, social support and adjustment are probably related in a bidirectional fashion. For example, the degree of distress experienced by the victim probably influences the amount of

support a victim is able to elicit from others, which in the more extreme cases may exhaust those resources. Thus, although level of social support may predict adjustment, adjustment also may impact whether social support is helpful.

Despite the large amount of research on post-assault adjustment in rape victims, to my knowledge no published study has data on pre- and post-rape adjustment, though clearly both pre and post data are necessary to make causal inferences (e.g., Becker et al., 1986; Cohen & Roth, 1987; Girelli et al., 1986; Meyer & Taylor, 1986). In addition to the complete absence of pre-rape adjustment data, very few studies have taken a longitudinal approach to studying post-rape adjustment, though several recognize the necessity of such a design (e.g., Bownes et al., 1991; Sales, Baum, & Shore, 1984). Researchers have found significant symptomotology in women several years after they were raped (e.g., Burgess & Holmstrom, 1979; Cohen & Roth, 1987; Girelli et al., 1986), suggesting that in order to study the entire scope of the post-rape adjustment process, longitudinal studies lasting several years are in order.

The Stress Resistant Personality & Rape Recovery

The effect of stress resistant personality traits has not been explored in association with the recovery process in rape victims. Exploration of such factors requires pre-

and post-assault personality data to clearly ascertain the influence personality has on the recovery process. Although there are several stress-resistant personality constructs (e.g., Hardiness, Optimism), I believe Antonovsky's (1987) Sense of Coherence is particularly relevant to understanding post-rape adjustment because of its origin in post-trauma populations.

Sense of Coherence

Aaron Antonovsky (1987) is an American-born medical sociologist living in Israel, who in the course of studying World War II concentration camp survivors became interested in how a sizable percentage of this group not only managed to maintain good mental and physical health, but actually described their concentration camp experience as an important part of their personality. He noted that often researchers have tried to understand why a particular organism or set of organisms becomes sick or diseased, but he offered that a salutogenic approach also needs exploration. This approach involves examining why people move toward the health end of the health-disease continuum. Initially, Antonovsky conceptualized generalized resistance resources (GRRs), such as money, ego strength, and social support as factors moving individuals toward health. He found this idea unsatisfactory because he could not readily identify GRRs or how they worked. This led to his

development of the sense of coherence (SOC) concept. Antonovsky (1987) formally defined SOC as follows:

> The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (p. 19)

Antonovsky (1987) developed a 29-item questionnaire to measure SOC. The overall construct is composed of three interrelated components called comprehensibility, manageability, and meaningfulness. Comprehensibility is a measure of the degree to which the respondent views life events as making sense, or capable of being ordered. Life events may come as a surprise and may be viewed as undesirable, but the person with a high score on comprehensibility will not perceive such events as random or chaotic. Manageability refers to the extent to which the respondent feels he or she has the resources to cope with life events. Life events may pose challenges, but strong manageability helps people feel they have the capacity to cope. Resources to cope with problems may actually come from some other person or organization, but the respondent

views these resources as readily available. Finally, meaningfulness measures the extent to which the respondent feels the challenges posed by life are worthy of the energy required to resolve them. Individuals with a strong sense of meaningfulness view obstacles more as welcome and valuable tasks, rather than as burdens. Such a person will look for emotional meaning or value in tragic events. For further description of the questionnaire, examples of the types of items on it, and a report of its psychometric properties, please refer to the Materials subsection in this manuscript's Method.

Antonovsky (1987) postulates that experiences in early adulthood have the greatest impact in determining a person's somewhat enduring position on the SOC continuum. He specified the end of the first decade of adulthood as a time after which SOC probably does not change much, or when changes do occur they are probably minimal and extended over a long period of time.

In a longitudinal study of Israeli medical students (n = 33), Carmel and Bernstein (1989) found a strong negative relationship between SOC and Trait Anxiety, as measured by Spielberger's State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), and that both of these traits are fairly stable over time, although SOC appeared more sensitive to stressors. Trait Anxiety was a better

predictor of subsequent SOC scores than the reverse. Given that their sample was of young adults, they interpreted these findings as supporting Antonovsky's notion that SOC does not stabilize until the end of the first decade of adulthood.

That is not to say that experiences in childhood and adolescence do not influence a person's position on that continuum. In fact, life events in childhood are related to SOC scores. Antonovsky and Sagy (1986) found that the development of SOC was related to community stability and age in adolescents, both of which are predicted in Antonovsky's theory. In a comparison between Israeli high school students required to evacuate their homes (n = 63) and their classmates who were not being evacuated (n = 266), they found that the former group had lower SOC scores. Looking at the group as a whole they found that the strength of the SOC increased with age. Similar to Carmel and Bernstein (1989), they found a strong inverse relationship between SOC and Trait Anxiety.

Further exploration of the changes in SOC scores during early adulthood revealed gender differences with respect to the type of stressors that contributed to decreasing SOC scores (Bernstein & Carmel, 1991). Women enrolled in medical school reported that professional status issues (e.g., long work hours, worries about getting a job in the

future, and job status concerns) were the main type of stressor they were experiencing. In contrast, men enrolled in medical school reported concerns about academic demands (e.g., fears about failing, difficulties absorbing course materials) as producing increased levels of stress. Thus, although both women and men had decreases in their SOC as a result of general medical school stress, the specific issues that were viewed as stressful were different for women and men.

Carmel, Anson, Levenson, Bonneh, and Moaz (1991) also reported gender differences for SOC. Their findings suggested that a strong SOC in women did not provide a countering effect against the negative impact on health of stressful life events. In a study of two kibbutzim (N = 230), Carmel et al. (1991) explored the effects of recent life events and SOC on health. They reported that negative life events showed a negative impact on psychological and physical well-being, while SOC showed a positive influence. However, this finding only held up for men. For women, negative life events had a negative impact on health, but SOC did not seem to exhibit a counterbalance. This finding is possibly due to the nature of life on a kibbutz. The authors speculate a personal resource such as the SOC may be less important in a setting where social resources are readily available (Carmel et al., 1991).

There are several other recent studies that have found SOC to be related to measures of mental and physical health and inversely related to stress. Nyamathi (1991) examined an abbreviated version of the SOC (13 items) in a sample of minority (Blacks and Hispanics) homeless or drug-abusing women (N = 581) and found that women with a stronger SOC scores reported significantly less emotional distress as measured by the Profile of Mood States (McNair, Lorr, & Droppleman, 1981, as cited in Nyamathi, 1991) and fewer somatic complaints as measured by the Somatization Scale of SCL-90-R (Derogatis & Cleary, 1977). Furthermore, when they combined SOC with self-esteem (Self-Esteem Inventory, Coopersmith, 1967, as cited in Nyamathi, 1991) and social support availability (a social support scale developed by Zich & Temoshok, 1987, as cited in Nyamathi, 1991) to form a regression equation, they were able to account for 49 percent of the variance of emotional distress.

Flannery and Flannery (1990) found SOC to be negatively correlated with life stress in a sample (N = 95) of adult volunteers taking evening college courses. Consistent with Antonovsky's theorizing, SOC appeared to lessen the impact of life stressors through a global predisposition to respond to life stress, rather than as a specific buffer. Hart, Hittner, and Paras (1991) found SOC to be strongly and negatively correlated with Trait Anxiety scores among

American college students (N = 59). Ryland and Greenfield (1991) found significant correlations between SOC and four measures of perceived stress from work among untenured faculty members (N = 302) from various universities in California. Their study also found a positive relationship with a measure of General Well-Being as measured by a six-item index they adapted from Lennon (1987, as cited in Ryland & Greenfield, 1991). General Well-Being measured such things as energy level, happiness, and health concerns.

It is important to note that despite several findings of positive relationships between SOC and health and inverse relationships between SOC and stress, simple correlations do not allow us to predict causation (Ryland & Greenfield, 1991). Antonovsky (1990) speculated that SOC does have a causal impact on health and suggested at least three ways this might occur. First, the person with a strong SOC is likely to engage in health promoting behaviors. There is at least some empirical evidence that this may be true. Nyamathi (1991) found that in her sample of homeless or drug-abusing women, those with a stronger SOC had fewer behaviors placing the women at risk for HIV infection (e.g., IV drug use, unprotected sex). However, this relationship was fairly weak. SOC combined with self-esteem and a measure of social support availability was able to account

for only 10 percent of the variance in HIV high-risk behaviors.

Second, Antonovsky (1990) hypothesized that the person with a strong SOC will perceive life stressors as comprehensible, manageable, and meaningful helping to maintain physiologic homeostasis. Third, such a person is likely to use coping strategies that help resolve stressors, an outcome which both reduces tension and offers salutogenic benefits that accompany the successful resolution of a stressor. Explicit empirical support does not exist for these latter two ways SOC impacts health. Nevertheless, Antonovsky (1990) believes that the use of flexible coping strategies allowing the strong SOC person to resolve stressors, will have the strongest impact on health.

Antonovsky (1990) theorized that when the strong SOC individual identifies a stimulus as a stressor, he or she is more likely to define the stressor as benign or even welcome. Such a person is also capable of ordering the problem so that it can be solved. However, the SOC is nct to be viewed as a particular style of coping, rather it represents being able to select the coping strategy that best matches the widely variable assortment of stressors that life offers. Mobilizing the appropriate resources requires a wide array of resources to choose from. Thus, SOC offers a reduction of the harmful effects of stress by

allowing successful coping, rather than by somehow buffering the person from the stressor. Finally, a person with a strong sense of coherence evaluates the effectiveness of the coping strategy employed and considers alternative strategies.

In sum, Antonovsky (1987) has encouraged looking at questions about mental and physical well-being on a health-disease continuum using a salutogenic perspective. His interest is in what moves people toward the health pole. He has also provided a measure of a global orientation to life that he believes is capable of determining a person's relative potential for movement toward the health end of the continuum. Thus, it follows that this instrument may prove to be a useful prospective instrument in understanding the wide variability in levels of adjustment among individuals surviving a traumatic event such as sexual victimization. Furthermore, a study of coping within this population may offer some validation for the mechanism Antonovsky believes is most important for translating a global outlook into better health.

Proposed Study

This study proposed to assess and predict the variability in psychological adjustment among first-year college women who reported that they had experienced unwanted sexual intercourse. It employed both

cross-sectional and longitudinal designs, with the latter design incorporating a prospective examination of adjustment after an incident of unwanted sexual intercourse. As indicated above, it is difficult to gather data on adjustment prior to such an incident. The uncertainty of such an event was addressed by obtaining a large sample of a group, first-year female college students, shown to be at higher risk for sexual assault than a random sample of the population at large.

The proposed study employed a mail survey targeted at all incoming first-year female students at the University of North Dakota. The first assessment coincided with their arrival on campus allowing the collection of data prior to any sexual coercive incidents that would take place on campus. The questionnaire gathered data on SOC, current adjustment, history of sexually coercive experiences, assault characteristics, and a measure of coping. Cross-sectional analysis was used on data collected during the initial sample as this represented the sample prior to attrition. Cross-sectional analysis examined sexual assault prevalence in first-year women, and also made comparisons between women reporting unwanted sexual intercourse (USI) and women who had not been sexually coerced (NSC) on several variables (e.g., SOC, adjustment, demographic data). Further examination of the USI group was undertaken in a

concurrent predictors fashion, exploring relationships between incident characteristics (e.g., recency of the sexually coercive incident, number of times the woman reported being sexually coerced, degree of force used by the man, type of resistance offered, whether or not the woman sought help) and post-incident adjustment.

Subsequent mailings (the beginning of spring semester and end of spring semester) incorporated the same measures which allowed the prospective analysis of longitudinal data. Sense of coherence and the measures of coping were chosen to serve as predictors of subsequent adjustment.

Given the relatively low annual incidence rates, the entire group of incoming first-year female students was sampled and several strategies were employed to attempt to increase response rates. Subjects received an announcement during their first-year student orientation that they would be receiving a survey in the mail. Subjects were also be contacted by phone and encouraged to participate and given a chance to ask questions. Subjects also received a reminder postcard one week after they received the survey. Finally, if they participated, they received an extra credit voucher which they could apply toward their grade in a psychology course. Questionnaires were anonymous in order to encourage candid responses.

Limitations

There are some inherent problems with this research. First, there is a self-selection sampling bias, which has also been a problem in previous research (e.g., Becker et al., 1986; Meyer & Taylor, 1986). Second, asking women to consider how they would cope given they had been sexually coerced, has the potential to bias how they actually do cope with this stress when it occurs, especially given that subjects are anticipating completing another questionnaire. The third issue of concern pertains to using SOC with this population. We would expect women scoring higher on the SOC construct before exposure to sexual assault will also show better adjustment after the event. However, there is a potentially confounding factor. Stability of SOC is theoretically not achieved until the end of the first decade as an adult, thus, when examining psychological adjustment to rape in young female adults, the rape may impact the victim in such a way that it changes her global outlook. Finally, there was at least one study (Carmel et al., 1991) that reported SOC did not appear to counter the detrimental effects of life stressors for women. Thus, even if SOC were a stable construct, it may be unable to predict which women will show the best post-rape adjustment.

Hypotheses

Cross-Sectional Sample. It is hypothesized that a comparison between the USI and NSC groups would reveal differences between these groups on measures of adjustment and Sense of Coherence. The USI group was expected to show poorer levels of adjustment and lower SOC scores. It is hypothesized that within the group of women reporting a history of sexual victimization, the recency of the sexually coercive incident, the number of times the woman reported being sexually coerced, the Sense of Coherence total score, coping, the degree of force used by the man, the type of resistance offered, and whether or not the woman sought help would each contribute to the prediction of adjustment.

Longitudinal Sample. It was hypothesized that among women who reported unwanted sexual intercourse after their arrival on campus, the Sense of Coherence total score, coping, the number of times the woman reported being sexually coerced, and pre-incident adjustment would predict post-incident adjustment. Furthermore, it was predicted that after controlling for pre-incident adjustment, the other factors (e.g., SOC) would still predict post-incident adjustment. In addition, concurrent assault characteristics such as degree of force used by the man, type of resistance offered by the woman, whether or not she sought help were hypothesized to also impact adjustment.

METHOD

Subjects

All first-year female students (N = 778) at a Northern Plains state university during the 1993-1994 academic year were sent a questionnaire and a letter encouraging them to participate. Two subsamples were constructed from the women who responded to the questionnaire. One sample (i.e., the cross-sectional sample) consisted of all the women who returned a completed questionnaire at the first data collection point (i.e., August 1993). Subjects in this sample were 411 first-year women (M = 18.1 years old, 95.9% Caucasian, 99.0% never married, 60.5% from hometowns with populations of 10,000 or less, 90.5% from North Dakota and Minnesota). The second sample (i.e., the longitudinal sample) was a subset of the cross-sectional sample and consisted of women from that group that reported unwanted sexual intercourse some time between the first and last data collection points (i.e., August 1993 and April 1994). Unwanted sexual intercourse was defined as vaginal, anal, or oral penetration by a man's penis, or vaginal or anal penetration by objects other than a man's penis. Women who

reported being overwhelmed by verbal pressure were included in this subsample.

Subjects' responses to questionnaires were anonymous (see Procedure) and all subjects were treated in accordance with the American Psychological Association "Ethical Principles of Psychologists and Code of Conduct" (APA, 1992). Each respondent received an hour of course extra credit each time she returned a completed questionnaire, up to a total of three hours. Subjects completing the third mailing were also entered into a drawing for one of three $25 awards.

Materials

The following four questionnaires were administered to all subjects at each of the three data collection points: the Sense of Coherence Questionnaire (Antonovsky, 1987), the Brief Symptom Inventory (Derogatis & Spencer, 1982), the Sexual Experiences Survey (Koss, Gidycz, & Wisniewski, 1987), and the Coping Strategies Inventory (Tobin, Holroyd, & Reynolds, 1984). In addition, a variety of demographic data were collected. These were home state, hometown population, age, race, marital status, and frequency of illness. There also were questions about characteristics of any reported sexually coercive incidents, including relationship to the male, degree of force used by the male, type of resistance offered, and whether or not assistance

was sought and the extent to which the event was viewed as rape (see Appendix).

Sense of Coherence Questionnaire

The Sense of Coherence Questionnaire (SOC; Antonovsky, 1987) is a 29-item self-report inventory that measures a global orientation to life that is related to a healthy outcome following stressful events. Subjects completing the SOC respond to the items on a seven-point Likert scale. The SOC has three separate components: Comprehensibility, Manageability, and Meaningfulness. The Comprehensibility component (11 items) measures the extent to which events in the external and internal world make cognitive sense (e.g., "Think of the people with whom you come into contact daily, aside from the ones to whom you feel closest. How well do you know most of them?" 1 = "you feel that they're strangers"; 7 = "you know them very well"). That is, the stimuli are viewed as understandable, consistent, predictable, and explicable, regardless of the desirability of events. Manageability (10 items) is a measure of the extent to which the respondent believes he or she has the resources to cope with the stimuli that he or she encounters (e.g., "In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it: 1 = "surely wouldn't get done"; 7 = "surely would get done"). The resources may actually be

controlled by someone else, but those resources can be tapped to help the individual cope with negative life events. The third component, Meaningfulness (8 items), is a measure of the extent to which life makes sense emotionally and is worthy of the investment of energy and effort (e.g., "Do you have the feeling that you don't really care about what goes on around you?" 1 = "very seldom or never"; 7 = "very often"). Given tragic life events, meaningfulness implies the desire to take up the challenge of finding meaning in the event and to overcome it (Antonovsky, 1987).

Antonovsky (1987) reported consistently high Cronbach's alphas, which ranged from .84 to .93, suggesting adequate internal consistency. He indicated that his 29-item scale and a 22-item instrument developed by independent researchers (Rumbaut, Anderson, & Kaplan as cited in Antonovsky, 1987) to measure their understanding of the SOC construct had a correlation of .639, suggesting concurrent validity. The SOC showed convergent validity with Rotter's Internal-External Locus of Control. The correlation was .385. The SOC also showed divergent validity with the Saronson Test Anxiety Scale (-.212). Holm, Ehde, Lamberty, Dix, and Thompson (1988) reported additional evidence of divergent validity with highly negative correlations between SOC and measures of anxiety (-.710), depression (-.625), and physical distress (-.543) in a sample of undergraduates (N =

100). McSherry, Holm, and Popinga (1991) had similar findings in a group of first year undergraduates (N = 124). They reported negative correlations between SOC and anxiety (-.591), depression (-.516), and physical symptoms (-.430).

Antonovsky (1987) claimed further evidence of validity on the SOC based on mean score differences among groups expected to have differences. He found his highest mean score among Israeli army officer trainees. He stated this was expected because these individuals represented a select group of healthy individuals who are highly motivated to succeed in a challenging situation. In contrast, scores for an Israeli national sample, an American production workers sample, and three American undergraduate samples were notably lower, while the mean SOC scores for samples of health workers from Israel, Edmonton, and Nordic countries fell in between. He stated the latter group represented individuals "engaged in respected and often satisfying work," (p. 84) and thus, would be expected to be higher than the former, yet lower than the officer trainees.

With respect to predictive validity, Antonovsky (1987) found that when dividing the Israeli national sample into five categories based on responses to the SOC and responses to a self-rating of health status, only 7 percent of the individuals in the highest SOC category were in the poorest health category and 35 percent of the lowest SOC category

were in this same health category. This suggested that SOC is at least related to health status, although nothing can be said about causality.

Finally, as for the three components of the SOC (Comprehensibility, Manageability, and Meaningfulness), Antonovsky (1987) claimed they are "inextricably intertwined," (p. 86) and, in fact, are not empirically separable. He reported that intercorrelations for the three components were .45, .59, and .62.

Brief Symptom Inventory

The Brief Symptom Inventory (BSI; Derogatis, 1975) is a 53-item symptom checklist for assessing psychological symptom status in both clinical and non-clinical populations. It is the brief version of the Symptom Checklist-90, Revised (SCL-90-R). Subjects respond to the BSI items on a five-point Likert scale (0 = "Not at all"; 4 = "Extremely") and report the degree of distress they have experienced from each symptom over a given time period. The standard time set is 7 days, however, Derogatis and Spencer (1982) claimed that a period up to 14 days does not appreciably affect the clinical profile. In this study, the period was two weeks. The BSI has nine symptom dimensions and three global indices, derived using a combination of rational and empirical methods. These dimensions and indices are described below.

Somatization (7 items) reflects distress arising from bodily dysfunction (e.g., "Nausea or upset stomach"). The Obsessive-Compulsive dimension (6 items) focuses on recurring unwanted thoughts or actions that the respondent feels he or she is unable to control (e.g., "Having to check and double-check what you do"). Interpersonal Sensitivity (4 items) refers to feelings of inadequacy or inferiority and discomfort in interpersonal exchanges (e.g., "Your feelings being easily hurt"). Depression (6 items) focuses on the symptoms of clinical depression, including dysphoric mood and lack of interest in life activities (e.g., "Feelings of worthlessness"). The Anxiety dimension (6 items) contains items addressing tension, nervousness, and panic (e.g., "Nervousness or shakiness inside"). Hostility (5 items) reflects feelings of irritability and associated behaviors, such as breaking things and frequent arguments (e.g., "Feeling easily annoyed or irritated"). Phobic Anxiety (5 items) focuses on agoraphobic fears, such as fear of travel, open spaces, and crowds (e.g., "Feeling afraid in open spaces"). Paranoid Ideation (5 items) contains items that focus on thinking marked by suspiciousness, projection, and the fear of losing autonomy (e.g., "Feeling others are to blame for most of your troubles"). Psychoticism (5 items) contains items varying from social alienation to symptoms found in floridly psychotic persons (e.g., "The

idea that someone can control your thoughts"). There are also four items that load on several dimensions and were retained because of their clinical significance, such as vegetative symptoms (Derogatis & Melisaratos, 1983).

The global indices are General Severity Index (GSI), Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST). These indices are intended to summarize degree of distress in a single score. The GSI is considered the best single measure of current distress, while the PSDI is strictly a measure of intensity and the PST reflects a total count of symptoms, which are experienced to any degree.

Derogatis and Melisaratos (1983) reported Cronbach's alphas ranging from .71 to .85 on the nine dimensions of the BSI. The test-retest reliability coefficients for a two-week interval ranged from .68 to .91 for the dimensions and was .90 for the GSI. Correlations between the BSI and the SCL-90-R ranged from .92 to .99 on the nine dimensions suggesting both measure the same symptom constructs.

With respect to validity, Derogatis and Melisaratos (1983) found that the BSI showed good convergent validity with the clinical scales of the MMPI, the Wiggins Content Scales of the MMPI, and the Tyron Cluster Scores. They reported that the correlations of the BSI with the MMPI scales were almost identical to correlations between the

SCL-90-R and these same scales on three of the dimensions, and showed some reductions in the magnitude of the correlations on the remaining dimensions, though still indicating convergent validity.

The internal structure of the BSI was tested using principal components analysis, and nine interpretable factors were derived (Derogatis & Melisaratos, 1983). There are some minor differences between the empirical factor structure and the rationally derived structure. For example, the Interpersonal Sensitivity dimension items were split up, loading on several of the factors and the Anxiety dimension was split into two separate factors representing logical clinical subdivisions. The remaining seven dimensions were reproduced with little or no disjucture to items.

Sexual Experiences Survey

The Sexual Experiences Survey (SES; Koss, Gidycz, & Wisniewski, 1987) is a 10-item self-report questionnaire designed to assess the level of sexual victimization a woman has experienced. The questionnaire also has an alternate wording for assessing male aggression. The items are in a yes-no format and are ordered from lesser to greater level of sexual coercion. The following are examples of two items, the third item: "Have you had 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, etc.) to make you?", and the ninth item: "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, etc.) to make you?". In addition to responding in a dichotomous way to each item, if subjects answered yes to any question, they were instructed to estimate the approximate date(s) the event occurred. Multiple occurrences of a given event were denoted by entering an approximate date for each time it occurred.

Reliability and validity of the survey were assessed on several populations of college students since this population has been studied most extensively and is considered at high risk for sexual assaults (Koss & Gidycz, 1985). The internal consistency (Cronbach's alpha) of the items was .74. Test-retest reliability for a one-week interval had a mean-item agreement of 93 percent. In order to test the accuracy of the original SES (Koss & Oros, 1982), a sample (N = 242) of women representing all degrees of sexual victimization were selected from a larger pool. These women were re-administered the SES in person along with a standardized interview and were then classified into one of four levels of victimization. The four levels were non-victimized, sexually coerced, sexually abused, and

sexually assaulted. Of these only the last category met the legal definition for rape. The correlation between the level of victimization based on self-report and responses to the interview was .73. Among 23.5 percent of the women whose interview responses changed their victimization classification, 16 percent moved from a higher to a lower category and 7.5 percent moved from a lower to a higher category. Of the 62 women whose self-report suggested rape, only 2 changed responses or offered questionable responses during the interview (Koss & Gidycz, 1985).

Coping Strategies Inventory

The Coping Strategies Inventory (CSI; Tobin, Holroyd, & Reynolds, 1984) is a 72-item self-report inventory designed to measure coping thoughts and behaviors for a specific stressor. Subjects completing the CSI respond to the items on a five-point Likert scale (1 = "Not at all"; 5 = "Very much"). Hierarchical factor analysis revealed that the scale has a hierarchical factor structure with three layers, that include eight primary factors, four secondary factors, and two tertiary factors (Tobin, Holroyd, Reynolds, & Wigal, 1989).

The eight primary factors, each consisting of nine items, are Problem Solving, Cognitive Restructuring, Express Emotions, Social Support, Problem Avoidance, Wishful Thinking, Self-Criticism, and Social Withdrawal. The

Problem Solving subscale includes items that refer to strategies to reduce stress by changing the stressful situation (e.g., "I worked on solving the problems in the situation."). The Cognitive Restructuring subscale contains items describing cognitive strategies to change the meaning of the stressful event. Thus, it is viewed as less threatening or from a different perspective, especially in search of positive aspects (e.g., "I convinced myself that things aren't quite as bad as they seem."). These two subscales are combined to form the secondary subscale Problem-Focused Engagement (Tobin et al., 1989).

Tobin et al. (1989) found the next two primary subscales combine to form the secondary subscale, Emotion-Focused Engagement. First, the Social Support subscale is the primary subscale that contains items assessing the extent to which the respondent sought help from other people, including friends and family (e.g., "I found somebody who was a good listener."). Second, the Express Emotions primary subscale has items about releasing and expressing emotions (e.g., "I got in touch with my feelings and just let them go."). The four primary subscales and two secondary subscales described above combine to form the tertiary subscale, Engagement.

The subsequent primary subscales are grouped into the tertiary subscale Disengagement (Tobin et al., 1989). The

first two (Problem Avoidance and Wishful Thinking) comprise the Problem-Focused Disengagement secondary subscale and the last two (Self-Criticism and Social Withdrawal) make up the Emotion-Focused Disengagement secondary subscale. The Problem Avoidance subscale contains items that refer to the denial of problems and avoidance of thoughts and behaviors associated with the stressor (e.g., "I went along as if nothing were happening."). The Wishful Thinking subscale describes cognitive strategies that fail to reframe or alter the situation (e.g., "I wished that the situation would go away or somehow be over with."). The Self-Criticism subscale has items describing self-blame and self-criticism with respect to the situation (e.g., "I criticized myself for what happened."). Finally, the Social Withdrawal subscale contains items describing withdrawal from others, especially with respect to expressing emotions (e.g., "I spent more time alone.").

Tobin et al. (1984) reported the alpha coefficients for the CSI ranged from .71 to .94 (M = .83). In measuring a two-week, test-retest reliability, Tobin et al. (1984) reported correlations that ranged from .39 to .61 (M = .51). They note that repeated assessments of coping presents a problem over trait measures in that stressors change over time, and even with chronic stressors alternative coping strategies may be employed over time. They found higher

correlations when subjects are instructed to imagine how they would cope with a standard stressor. Correlations ranged from .49 to .65 (M = .61). Both alpha coefficients and Pearson correlations indicate adequate reliability in assessing coping. Tobin et al. (1984) also claimed successful discrimination between symptomatic and normal samples. The CSI has differentiated depressed from non-depressed, headache from non-headache, and neurotic from normal samples.

Procedure

The cover letter, instructions, consent form, set of questionnaires, business return envelope, and business return postcard were mailed to all eligible subjects with a local address on record (n = 756). The first mailing was sent at the beginning of fall semester (August 27, 1993). Beginning on the first day of classes (August 30, 1993) each potential subject received a phone call from either a female graduate student or an advanced level female undergraduate research assistant. The caller asked if the woman had received the questionnaire, offered to answer questions, and encouraged participation. If the woman contacted had already completed the questionnaire, the caller answered any questions and thanked the subject for her participation. One week after the questionnaires were mailed (September 3, 1993), a reminder postcard was sent to all potential

subjects. A smaller second mailing targeted at the remaining eligible subjects (n = 22) was sent three weeks after the initial one (September 17, 1993). This mailing was also be followed up by a phone call, and a reminder postcard.

The information received by subjects instructed them to read the consent form. Completion of the questionnaires was taken as an indication that the students had read and understood the consent form and agreed to participate in the study. The subjects then selected a subject number so that subsequent questionnaires could be linked with their previous data, and yet their actual responses would not be able to be traced to them. They were told to use the last three letters of their maternal grandmother's first name and their mother's date of birth. For example, if the subject's grandmother's name was Mary Jane Smith and her mother's date of birth was September 6, 1943, then her subject number was ARY-090643. The reason for choosing this combination, is that when given these instructions in the future, they were able to duplicate their subject number. At the same time, this information is relatively obscure, making it virtually impossible to trace a subject number to the subject, essentially, allowing their responses to be anonymous.

Next, the subjects were instructed to complete the questionnaires and to return them in the business reply

envelope. They also returned the business reply postcard with their name, address, and phone number as an indication they completed the questionnaire so that they could be contacted in the future. Furthermore, it allowed them to claim their psychology course extra credit voucher. The extra credit voucher was for 1 hour of research participation each time they completed the questionnaire. They were able to submit it to the instructor of the psychology course of their choice. The questionnaire took approximately 30 minutes to complete.

Subjects were informed when they had completed the first set of questionnaires that they would be contacted again. Subsequent mailings followed the protocol outlined above with the exception that only women who completed the previous set of questionnaires were contacted. Subsequent questionnaires were mailed on January 11, 1994 and April 28, 1994.

Statistical Analysis

Cross-Sectional Sample

Cross-Sectional Analysis. This portion of the analysis incorporated a between-group design. The first independent variable (IV) was coercion status (unwanted sexual intercourse, or USI, and non-sexually coerced, or NSC). Women in the USI group reported unwanted sexual intercourse, including being overwhelmed by verbal pressure. The NSC

group was comprised of all subjects who denied experiencing any type of unwanted sexual contact. The second IV further subdivided the USI group based on the type of coercion (USI-Verbal and USI-Other). The USI-Verbal group refers to women who reported that they gave into unwanted sexual intercourse because they were "overwhelmed by a man's continual arguments and pressure." The USI-Other group refers to women who reported that they gave into unwanted sexual intercourse because a man gave them alcohol or drugs or "threatened or used some degree of physical force."

The dependent variables were the total score on the Sense of Coherence Questionnaire, the nine dimensions and General Severity Index of the Brief Symptom Inventory, percent of the eight primary factors of the Coping Strategies Inventory (percent was used rather than the scores for the primary factors in order to compare the relative degree to which each of the coping strategy was used), and some demographic variables (e.g., hometown population, marital status, and frequency of illness). A combination of multivariate analysis of variance (MANOVA) and analysis of variance (ANOVA) was used to analyze data.

Concurrent Predictors Analysis. The second phase of analysis of the cross-sectional sample examined only women in the USI group. Multiple regression was used to determine the relationship between various independent variables and

psychological adjustment. The IVs were: 1) recency of the sexually coercive incident (RECENCY), 2) number of times the woman reported being sexually coerced (FREQUENCY), 3) the total score on Sense of Coherence Questionnaire (SOCTOT), 4) the ratio between the tertiary level factors (Engagement and Disengagement) of the Coping Strategies Inventory (CSIRATIO), 5) degree of force used by the man (FORCE), 6) type of resistance offered (RESIST), and 7) whether or not the woman sought help (HELP). The dependent variable was the General Severity Index (GSI) of the Brief Symptom Inventory. The standardized regression equation was as follows:

$$(GSI)' = \beta_R\ (RECENCY) + \beta_F(FREQUENCY) + \beta_S(SOCTOT) + \beta_C(CSIRATIO) + \beta_F(FORCE) + \beta_R(RESIST) + \beta_H(HELP)$$

where (GSI)' is the predicted value of GSI post-coercion, β is the standardized regression coefficient for the respective IVs, and RECENCY, FREQUENCY, SOCTOT, CSIRATIO, FORCE, RESIST, and HELP are the IVs. In addition to the regression equation above, a correlation matrix was created in order to examine bivariate correlations between the IVs and the DV.

Longitudinal Sample

Prospective Predictors Analysis. Multiple regression was used to determine the relationship between various

independent variables (IVs) and psychological adjustment. All of the IVs for the prospective predictors part of the analysis of the longitudinal sample were from data collected prior to sexual coercion (i.e., the IVs entered into the regression equation for a subject reporting sexual coercion at the second assessment were from the first assessment, while variables from the second assessment were entered for those reporting sexual coercion at the third assessment). The independent (predictor) variables were: 1) the General Severity Index (GSI1) of the Brief Symptom Inventory, a measure of pre-incident adjustment, 2) the total score on Sense of Coherence Questionnaire (SOCTOT1), 3) the ratio between the tertiary level factors (Engagement and Disengagement) of the Coping Strategies Inventory (CSIRATIO1), and 4) number of sexually coercive incidents (FREQUENCY1). The dependent (criterion) variable was the General Severity Index (GSI) of the Brief Symptom Inventory, a measure of post-incident adjustment. The standardized regression equation was as follows:

$$(GSI)' = \beta_G(GSI1) + \beta_F(FREQUENCY1) + \beta_S(SOCTOT1) + \beta_C(CSIRATIO1)$$

where (GSI)' is the predicted value of GSI post-sexual coercion, β is the standardized regression coefficient (beta) for the respective IVs, and GSI1, FREQUENCY1,

SOCTOT1, and CSIRATIO1 are the IVs. In addition to the regression equation above, a correlation matrix was created in order to examine bivariate correlations between the IVs and the DV.

Concurrent Predictors Analysis. The second phase of analysis of the longitudinal sample also used multiple regression to determine the relationship between various independent variables and psychological adjustment. However, this second analysis employed concurrent variables to assess the relationship between post-sexual coercion adjustment and incident characteristics. The IVs were: 1) recency of the incident (RECENCY), 2) number of times the woman reported being sexually coerced (FREQUENCY), 3) degree of force used by the man (FORCE), 4) type of resistance offered (RESIST), and 5) whether or not the woman sought help (HELP). The dependent variable was the General Severity Index (GSI) of the Brief Symptom Inventory. The standardized regression equation was as follows:

$$(GSI)' = \beta_R(RECENCY) + \beta_F(FREQUENCY) + \beta_F(FORCE) + \beta_R(RESIST) + \beta_H(HELP)$$

where (GSI)' is the predicted value of GSI post-victimization, β is the standardized regression coefficient (beta) for the respective IVs, and RECENCY, FREQUENCY, FORCE, RESIST, and HELP are the IVs. In addition

to the regression equation above, a correlation matrix was created in order to examine bivariate correlations between the IVs and the DV.

RESULTS

Overview

First, descriptive statistics (e.g., response rate, demographic data, prevalence, incidence) are presented; followed by the cross-sectional analysis of the initial sample, first comparing women in the Non-Sexually Coerced group (NSC, i.e., women reporting no unwanted sexual contact) to women in the Unwanted Sexual Intercourse group (USI, i.e., women who reported at least one episode of unwanted sexual intercourse, including unwanted sexual intercourse due to being overwhelmed by a man's continual arguments). Similar comparisons were then made between two subsamples of the USI group. The group was divided to allow comparison between women reporting unwanted sexual intercourse due solely to being overwhelmed by a man's continual arguments (USI-Verbal) and women reporting unwanted sexual intercourse for other reasons, such as a man had given her drugs or alcohol, or had used some degree of physical force (USI-Other). Next, there is a concurrent predictors regression analysis using variables obtained at the initial or first assessment to predict General Severity Index (GSI) scores from the Brief Symptom Inventory (BSI) in

women who reported at least one incident of unwanted sexual intercourse. Finally, there is the longitudinal analysis, a prospective predictors analysis, done with a subsample (those women reporting at least one incident of unwanted sexual intercourse between the first and last assessment) using variables from the pre-incident assessment to predict adjustment (GSI) in the post-incident assessment.

Descriptive Statistics

Response Rate

During the first assessment, 778 questionnaires were mailed to first-year female students. A total of 416 questionnaires were returned. Questionnaires from five of the subjects were thrown out because they reported their age to be 17 (i.e., the consent form required subjects to be at least 18 years old), leaving 411 questionnaires, or a 52.8% response rate. There were 394 postcards received. Thus, the subsequent assessments were sent to only those 394 subjects. The second and third assessment resulted in 252 and 249 questionnaires, respectively. Again, questionnaires from three of the subjects were thrown out because they reported their age to be 17 (at the first assessment), leaving 249 (63.2%) and 246 (62.4%) questionnaires, respectively. Of these last two samples, 192 (48.7%) subjects had data at all three assessments. An additional 40 (10.2%) subjects completed questionnaires at the first

and second assessment, and 33 (8.4%) subjects completed questionnaires at the first and third assessment. Questionnaires from the remaining 29 (7.4%) subjects responding to the second and/or third assessment could not be matched based on their subject number to subjects in the first sample (see Table 1 and Figure 1).

Demographic Data

Data for subjects responding to each of the three assessments are detailed in Table 2. The samples were highly homogeneous. The overwhelming majority of the subjects were 18-19 years old (97-98%), white (96%), and never married (98-99%). Most (55-60%) were from small hometowns (i.e., populations of 10,000 or less) and from either North Dakota (59-61%) or Minnesota (29-31%).

Prevalence

Of the subjects responding to the first assessment (N=411), 267 (65.0%) reported they had never experienced any unwanted sexual contact, while the remaining 144 (35.0%) reported at least one incident of some form of unwanted sexual contact during their life. Half of these women (n = 71) reported experiencing at least one incident of unwanted sexual intercourse, of whom 30 (7.3% of the total) reported that they had been "overwhelmed by arguments and pressure" or "a man had used his position of authority" (identified as sexual coercion in Table 4). The remaining 41 women may

Table 1

Response Rate for Women Completing Questionnaires in Each of Three Assessments

	Assessment					
	1. August		2. January		3. April	
	N = 778		n = 394		n = 394	
Subjects responding to:	n	%	n	%	n	%
1, 2 & 3	192	24.7	192	48.7	192	48.7
1 & 2	40	5.1	40	10.2		
1 & 3	33	4.2			33	8.4
2 & 3			9	2.3	9	2.3
1	146	18.8				
2			8	2.0		
3					12	3.0
Total Response	411	52.8	249	63.2	246	62.4

have experienced the verbal pressure, but also reported having sexual intercourse because a "man gave [them] alcohol or drugs," or had "threatened or used some degree of force" and included both penile-vaginal intercourse and anal or oral intercourse (identified as "rape" in Table 4). Of these 41 women, 14 women (3.4% of the total) reported they had been physically forced or had been threatened with force to have unwanted penile-vaginal intercourse (see Tables 3 & 4).

Table 2

Demographic Data for Each of Three Assessments

	Assessment					
	August		January		April	
	N = 411		n = 249		n = 246	
	n	%	n	%	n	%
Age			NA			
18-19	403	98.1			238	96.7
20-21	2	0.5			3	1.2
22-26	5	1.2			3	1.2
Race			NA			
Asian	4	1.0			3	1.2
Caucasian	394	95.9			235	95.5
Hispanic	3	0.7			2	0.8
Native American	6	1.5			4	1.6
Other	4	1.0			1	0.4
Marital Status			NA			
Never Married	407	99.0			240	97.6
Married	2	0.5			0	0.0
Separated	0	0.0			1	0.4
Divorced	2	0.5			3	1.2
Hometown Population						
<1K	105	25.5	61	24.5	58	23.5
1-10K	144	35.0	81	32.5	79	32.1
10-25K	40	9.7	22	8.8	27	11.0
25-50K	50	12.2	32	12.9	29	11.8
>50K	67	16.3	51	20.5	50	20.3
Home state						
North Dakota	250	60.8	147	59.0	149	60.6
Minnesota	122	29.7	77	30.9	71	28.9
Other States	39	9.5	25	10.0	26	10.6

Note. NA = Not Available

Table 3

Prevalence of Sexual Experiences for Female Undergraduates Prior to Their First Year of College

	N = 411	
Sexual Experiences Survey Questions	#	%
1. Have you given in to sex play...because you were overwhelmed by...arguments and pressure?	101	24.6
2. Have you had sex play...because a man used his position of authority...to make you?	9	2.2
3. Have you had sex play...because a man threatened or used...physical force...to make you?	30	7.3
4. Have you had a man attempt sexual intercourse...by threatening or using some degree of force...but intercourse did not occur?	26	6.3
5. Have you had a man attempt sexual intercourse...by giving you alcohol or drugs, but intercourse did not occur?	27	6.6
6. Have you given in to sexual intercourse... because you were overwhelmed by arguments and pressure?	49	11.9
7. Have you had sexual intercourse...because a man used his position of authority...to make you?	3	.7
8. Have you had intercourse when you didn't want to because a man gave you alcohol or drugs?	27	6.6
9. Have you had sexual intercourse...because a man threatened or used some degree of physical force...?	14	3.4
10. Have you had sex acts (anal or oral intercourse or penetration by objects other than the penis)... because a man threatened or used some degree of physical force...to make you?	7	1.7
Total reporting Unwanted Sexual Intercourse (Items 6-10)	71	17.3
Total reporting any form of unwanted sexual contact (Items 1-10)	144	35.0

Table 4

Prevalence of Most Severe Sexual Experiences for Female Undergraduates Prior to Their First Year of College

	N = 411	
Sexual Experiences Survey Questions	n	%
No unwanted sexual contact	267	65.0
Sexual contact (SES 1, 2 & 3)	53	12.9
Sexual coercion (SES 6 & 7)	30	7.3
Attempted rape (SES 4 & 5)	20	4.9
Rape (SES 8, 9 & 10)	41	10.0
Total reporting any form of unwanted sexual contact (SES 1-10)	144	35.0

Note. Data reported in the above table reflect prevalence of the most severe incident reported by each subject.

Incidence

Of the subjects responding to the second and third assessment (N = 294), there were 69 (23.5%) that reported at least one incident of unwanted sexual contact since they had first completed the questionnaire. Of these 69 women, 28 (9.5% of the total) reported at least one incident of unwanted sexual intercourse. Most of these women (19 or 6.5% of the total) reported being "overwhelmed by arguments and pressure" but did not endorse experience with unwanted sexual intercourse because a "man gave [them] alcohol or drugs," or had "threatened or used some degree of force" (see Tables 5 & 6). Of the 28 women who reported an incident of unwanted sexual intercourse during their first

Table 5

Incidence of Sexual Experiences for Female Undergraduates During Their First Year of College

Sexual Experiences Survey Questions	Jan. N=249 n	April N=246 n	Both N=294 n
1. Sexual contact by verbal coercion	34	31	55
2. Sexual contact by misuse of authority	0	2	2
3. Sexual contact by threat or force	3	4	7
4. Attempted intercourse by force	5	3	8
5. Attempted intercourse by alcohol or drugs	6	7	13
6. Intercourse by verbal coercion	13	11	21
7. Intercourse by misuse of authority	0	0	0
8. Intercourse by alcohol or drugs	4	5	7
9. Intercourse by threat or force	1	0	1
10. Oral or anal penetration by threat or force	1	1	2
Total reporting Unwanted Sexual Intercourse (SES 6-10)	16	16	28
Total reporting any form of unwanted sexual contact (SES 1-10)	43	40	69

reported an incident of unwanted sexual intercourse during their first year of college, more than half (15 of 28) had reported an incident of unwanted sexual intercourse prior to beginning college. Thus, women experiencing unwanted sexual intercourse for the first time were not separated from those

Table 6

Incidence of Most Severe Sexual Experiences for Female Undergraduates During Their First Year of College

	N = 294	
Sexual Experiences Survey Questions	n	%
No unwanted sexual contact	225	76.5
Sexual contact (SES 1, 2 & 3)	29	9.9
Sexual coercion (SES 6 & 7)	19	6.5
Attempted rape (SES 4 & 5)	12	4.1
Rape (SES 8, 9 & 10)	9	3.1
Total reporting any form of unwanted sexual contact (SES 1-10)	69	23.5

with previous incidents of unwanted sexual intercourse in subsequent analyses.

Using the reports of new incidents, a victimization rate was calculated in the same way as that used by Koss et al. (1987), given that the data was gathered using the Sexual Experiences Survey (SES). That is, victimization is defined as the number of "victims" divided by the number of women in that sample over a period of time. For crime statistics the time frame is usually 6 months. This calculation was done both according to the narrow FBI definition of rape and attempted rape, which includes only women responding "yes" to SES items for attempted or completed penile-vaginal intercourse that involved force or threat of force (i.e., SES items 4 & 9), and a broader

definition of rape that is legally prosecutable in some states, which also include forced oral or anal intercourse and attempted and completed penile-vaginal intercourse that involved the man giving the woman alcohol or drugs (i.e., SES items 4, 5, 8, 9, & 10).

In this study, there were 8 women out of the 294 (i.e., the total responding to either the second or third assessment) that met the narrow definition of rape or attempted rape over a period of 8 months. This converted to a victimization rate of 20 women per 1000 during a six month period. Using the broader definition, there were 21 of 294 that reported at least one new incident, which converts to a victimization rate of 54 women per 1000 during a six month period.

Cross-sectional Sample

Cross-sectional Analysis

Five (5) one-way analyses of variance (ANOVAs) were performed on the following variables: Sense of Coherence total score (SOCTOT), General Severity Index (GSI from the Brief Symptom Index (BSI), age, population of hometown, and the self-reported frequency of illness. The comparison groups were defined by coercion status (unwanted sexual intercourse and non-sexually coerced).

These two groups differed significantly on two of these variables: SOCTOT $F(1, 340) = 10.94$, $p < .05$; and GSI $F(1,$

331) = 8.57, $p < .05$. Women reporting unwanted sexual intercourse had lower mean total scores on Sense of Coherence and higher GSI scores (i.e., poorer adjustment). These two groups were not significantly different on the remaining variables: age $F(1, 338) = 1.66$, $p > .05$, hometown population $F(1, 335) = 1.16$, $p > .05$, and frequency of illness $F(1, 340) = 1.61$, $p > .05$ (see Table 7).

A between-groups multivariate analysis of variance (MANOVA) was performed on the nine symptom dimensions and an aggregate of four clinically relevant items from the BSI. These ten dependent variables were somatization (SOM), obsessive-compulsive (O-C), interpersonal sensitivity (INT), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), psychoticism (PSY), and the additional items (ADDN). The independent variable was coercion status (unwanted sexual intercourse and non-sexually coerced). This MANOVA was significant indicating that the combined variables were affected by coercion status, $F(10, 322) = 2.03$, $p < .05$.

The MANOVA was followed by univariate F-tests to detect differences between women reporting sexual coercion and non-sexually coerced women. These two groups differed on SOM $F(1, 331) = 7.00$, $p < .05$, O-C $F(1, 331) = 9.32$, $p < .05$, INT $F(1, 331) = 3.91$, $p < .05$, ANX $F(1, 331) = 5.76$, $p < .05$, HOS $F(1, 331) = 5.91$, $p < .05$, PAR $F(1, 331) = 9.16$, p

Table 7

Effect of Coercion Status on Sense of Coherence, General Severity Index, and Other Variables

	USI			NSC		
Variable	M	SD	n	M	SD	n
SOCTOT*	119.5	15.90	71	126.1	14.61	271
GSI*	.96	.51	70	.76	.53	263
Age	18.2	1.06	71	18.0	1.11	269
Hometown Population	2.7	1.46	70	2.5	1.45	267
Illness Frequency	2.2	.96	71	2.0	.88	271

Note. SOCTOT = the total score on Sense of Coherence Questionnaire; GSI = General Severity Index; Hometown Population reflects data from seven possible population categories (1=<1K, 2=1-10K, 3=10-25K, 4=25-50K, 5=50-100K, 6=100-500K, 7=>500K); Similarly, Illness Frequency reflects data from six possible frequency categories (1=very rarely, at most once a year, 2=only a couple times each year, 3=about once every other month, 4=about once a month, 5=several times each month, 6=continuously, always fighting some illness); USI = Unwanted Sexual Intercourse; NSC = Non Sexually Coerced. *$p < .05$.

$< .05$, and PSY $F(1, 331) = 8.04$, $p < .05$. In all of these differences, the USI group was higher on the respective symptom dimension than the NSC group. These groups did not differ on DEP $F(1, 331) = 3.33$, $p > .05$, PHOB $F(1, 331) = 1.51$, $p > .05$, or ADDN $F(1, 331) = 1.08$, $p > .05$ (see Table 8).

Eight (8) one-way analyses of variance (ANOVAs) were performed on the following coping strategy dependent variables: Problem Solving, Cognitive Restructuring, Express Emotions, Social Support, Problem Avoidance, Wishful

Table 8

Effect of Coercion Status on the Symptom Dimensions of the BSI

	USI (n = 70)		NSC (n = 263)	
Symptom Dimensions of the BSI	M	SD	M	SD
Somatization**	0.64	.56	0.46	.50
Obsessive-Compulsive**	1.33	.67	1.04	.73
IP Sensitivity*	1.40	.92	1.16	.94
Depression	1.02	.73	0.83	.77
Anxiety*	1.19	.68	0.97	.70
Hostility*	0.76	.74	0.57	.53
Phobic Anxiety	0.60	.55	0.50	.57
Paranoid Ideation**	1.02	.77	0.74	.67
Psychoticism**	0.85	.58	0.61	.62
Additional Items	0.88	.78	0.78	.65

Note. BSI = Brief Symptom Inventory; The scores for each of the dimensions range from 0 to 4, which reflects average of the items on each dimension. Each item has a range from 0 to 4 (0=Not at all, 1=A little bit, 2=Moderately, 3=Quite a bit, 4=Extremely); USI = Unwanted Sexual Intercourse; NSC = Non-Sexually Coerced. *$p < .05$. **$p < .01$.

Thinking, Self-Criticism, and Social Withdrawal. The independent variable was coercion status (unwanted sexual intercourse and non-sexually coerced). It should be noted that this comparison is unconventional because the NSC group were asked to imagine they were coping with an incident of unwanted sexual intercourse, while the USI group was reporting how they had coped with an actual incident of unwanted sexual intercourse.

These two groups differed significantly on seven of the eight coping strategy dependent variables, Problem Solving $F(1, 322) = 73.49$, $p < .05$, Express Emotions $F(1, 331) = 66.29$, $p < .05$, Social Support $F(1, 330) = 56.56$, $p < .05$, Problem Avoidance $F(1, 330) = 86.90$, $p < .05$, Wishful Thinking $F(1, 330) = 16.37$, $p < .05$, Self-Criticism $F(1, 331) = 69.67$, $p < .05$, and Social Withdrawal $F(1, 317) = 31.53$, $p < .05$. Women in the NSC group reported they would use more engaging (i.e., Problem Solving, Express Emotions, and Social Support) and less disengaging (i.e., Problem Avoidance, Wishful Thinking, Self-Criticism, and Social Withdrawal) coping strategies than the USI group. The only variable on which these two groups were not significantly different was Cognitive Restructuring $F(1, 331) = .09$, $p > .05$ (see Table 9).

The USI group was further subdivided into women reporting unwanted sexual intercourse due solely to being overwhelmed by a man's continual arguments (USI-Verbal) and women reporting unwanted sexual intercourse for other reasons, such as a man had given her drugs or alcohol, or had used some degree of physical force (USI-Other).

Table 10 summarizes the data about the characteristics of the most recent incident of unwanted sexual intercourse. The USI-Other group reported the man was a date or friend more often than the USI-Verbal group which reported the man

Table 9

Effect of Coercion Status on the Percent of Total Coping for the Primary Factors of the CSI

	USI			NSC		
Primary Factors of the CSI	M	*SD*	*n*	M	*SD*	*n*
Problem Solving***	10.7	2.69	65	14.3	3.11	259
Cognitive Restructuring	12.3	3.73	67	12.5	2.61	266
Express Emotions***	10.9	2.70	66	14.2	3.03	267
Social Support***	11.7	4.37	65	16.2	4.29	267
Problem Avoidance***	14.0	3.68	66	10.6	2.33	266
Wishful Thinking***	16.3	3.30	65	14.7	2.85	267
Self-Criticism***	13.6	4.54	67	8.9	3.94	266
Social Withdrawal***	13.1	4.60	61	10.2	3.36	258

Note. CSI = Coping Strategies Inventory; USI = Unwanted Sexual Intercourse; NSC = Non-Sexually Coerced. ***$p < .001$.

was a boyfriend more frequently, though both categories had the greatest representation in each of these groups. Consistent with the group definition, some degree of physical force was used more frequently in the USI-Other group, which also reported using a greater level of resistance than the USI-Verbal group. Finally, the USI-Other group ($M = 4.2$, $SD = 1.89$) rated their most recent incident of unwanted sexual intercourse higher on a 7-point (GSI), from the Brief Symptom Index (BSI), age, population Likert scale (1 = "Definitely not rape" and 7 = "Definitely rape") than the USI-Verbal group ($M = 2.4$, $SD = 1.63$). There were 17 (41.5%) of the USI-Other group with ratings of

Table 10

Frequency Distribution for Incident Characteristics of Women Reporting Unwanted Sexual Intercourse

	USI-Verbal n = 30		USI-Other n = 41	
	n	%	n	%
Relationship to man				
1. stranger	1	3.4	0	0.0
2. seen before	2	6.9	4	9.8
3. date or friend	10	34.5	22	53.7
4. boyfriend	15	51.7	11	26.8
5. husband or ex-husband	1	3.4	1	2.4
6. relative	0	0.0	3	7.3
Force used by man				
1. verbal intimidation	26	92.9	17	47.2
2. physical restraint	1	3.6	18	50.0
3. physical violence	0	0.0	1	2.8
4. displayed a weapon	1	3.6	0	0.0
Resistance used by woman				
1. none	6	20.7	8	19.5
2. verbal pleas or requests	18	62.1	16	39.0
3. verbal threats	2	6.9	3	7.3
4. physical resistance	3	10.3	14	34.1
Extent considered as rape				
1 definitely not rape	10	34.5	2	4.9
2	10	34.5	8	19.5
3	3	10.3	5	12.2
4	2	6.9	9	22.0
5	2	6.9	4	9.8
6	1	3.4	6	14.6
7 definitely rape	1	3.4	7	17.1

5, 6, or 7, while only 4 (13.8%) of the USI-Verbal group had similar ratings.

Five (5) one-way analyses of variance (ANOVAs) were performed on the following dependent variables: Sense of Coherence total score (SOCTOT), General Severity Index of hometown, and the self-reported frequency of illness. The independent variable was type of coercion (USI-Verbal and USI-Other).

These two groups differed significantly on only one of these variables: hometown population $F(1, 68) = 5.75$, $p < .05$. Women in the USI-Verbal group were from slightly larger hometowns on average. These two groups were not significantly different on the remaining variables: SOC $F(1, 69) = .58$, $p > .05$, GSI $F(1, 68) = .01$, $p > .05$, age $F(1, 69) = .01$, $p > .05$, and frequency of illness $F(1, 69) = .23$, $p > .05$ (see Table 11).

A between-groups multivariate analysis of variance (MANOVA) was performed on the nine symptom dimensions and an aggregate of four clinically relevant items from the BSI. These ten dependent variables were somatization (SOM), obsessive compulsive (O-C), interpersonal sensitivity (INT), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), psychoticism (PSY), and the additional items (ADDN). The independent variable

Table 11

Effect of Type of Coercion on Sense of Coherence, General Severity Index, and Other Variables

	USI-Verbal			USI-Other		
Variable	M	SD	n	M	SD	n
SOCTOT	121.2	14.49	30	118.3	16.93	41
GSI	.97	.58	29	.96	.46	41
Age	18.2	.75	30	18.2	1.25	41
Hometown Population*	3.2	1.56	30	2.4	1.29	40
Illness Frequency	2.2	.90	30	2.1	1.00	41

Note. SOCTOT = the total score on Sense of Coherence Questionnaire; GSI = General Severity Index; Hometown Population reflects seven possible population categories (1=<1K, 2=1-10K, 3=10-25K, 4=25-50K, 5=50-100K, 6=100-500K, 7=>500K); Illness Frequency reflects six possible frequency categories (1=very rarely, at most once a year, 2=only a couple times each year, 3=about once every other month, 4=about once a month, 5=several times each month, 6=always fighting some illness); USI-Verbal = Unwanted Sexual Intercourse due solely to being overwhelmed by a man's continual arguments; USI-Other = Unwanted Sexual Intercourse for other reasons, such as a man gave her drugs or alcohol, or used some degree of physical force. *$p < .05$.

was type of coercion (USI-Verbal and USI-Other). This MANOVA found no significant group differences indicating that the combined dependent variables were not significantly affected by type of coercion, $F(10, 59) = .29$, $p > .05$.

Eight (8) one-way analyses of variance (ANOVAs) were performed on the following coping strategy dependent variables: Problem Solving, Cognitive Restructuring, Express Emotions, Social Support, Problem Avoidance, Wishful Thinking, Self-Criticism, and Social Withdrawal. The

independent variable was type of coercion (USI-Verbal and USI-Other).

These two groups differed significantly on only one of the eight coping strategy dependent variables, Problem Avoidance $F(1, 64) = 4.58$, $p < .05$. Examination of the means revealed that women in the USI-Other group were more likely to use Problem Avoidance to cope with a sexually coercive incident than the USI-Verbal group. These two groups were not significantly different on the remaining variables, Problem Solving $F(1, 63) = 3.58$, $p > .05$, Cognitive Restructuring $F(1, 65) = .87$, $p > .05$, Emotional Expression $F(1, 64) = .88$, $p > .05$, Social Support $F(1, 63) = .68$, $p > .05$, Wishful Thinking $F(1, 63) = 1.33$, $p > .05$, Self-Criticism $F(1, 65) = .63$, $p > .05$, or Social Withdrawal $F(1, 59) = .35$, $p > .05$ (see Table 12).

Concurrent Predictors Analysis

A multiple regression analysis was used to determine the extent to which general severity indices of women reporting at least one incident of unwanted sexual intercourse prior to the first assessment could be predicted by the following seven independent variables: a) recency of the sexually coercive incident (RECENCY), b) number of times the woman reported being sexually coerced (FREQUENCY), c) the total score on Sense of Coherence Questionnaire (SOCTOT), d) the ratio between the tertiary level factors

Table 12

Effect of Type of Coercion on the Percent of Total Coping for the Primary Factors of the CSI

	USI-Verbal			USI-Other		
Primary Factors of the CSI	M	SD	n	M	SD	n
Problem Solving	11.4	2.92	28	10.2	2.40	37
Cognitive Restructuring	12.8	3.95	29	12.0	3.55	38
Express Emotions	10.5	2.54	29	11.1	2.83	37
Social Support	11.2	4.78	29	12.1	4.03	36
Problem Avoidance*	12.9	3.11	28	14.8	3.89	38
Wishful Thinking	15.8	2.91	29	16.8	3.57	36
Self-Criticism	13.1	3.55	29	14.0	5.18	38
Social Withdrawal	13.5	4.47	28	12.8	4.74	33

Note. CSI = Coping Strategies Inventory; USI-Verbal = Unwanted Sexual Intercourse due solely to being overwhelmed by a man's continual arguments; USI-Other = Unwanted Sexual Intercourse for other reasons, such as a man had given her drugs or alcohol, or had used some degree of physical force. *$p < .05$.

(Engagement and Disengagement) of the Coping Strategies Inventory (CSIRATIO), e) degree of force used by the man (FORCE), f) type of resistance offered (RESIST), and g) whether or not the woman sought help (HELP). Table 13 displays the unstandardized regression coefficients (B), the standard error of the coefficients (SE B), the standardized regression coefficients (β), the semipartial correlations (sr^2), and the multiple R, R^2, and adjusted R^2. The multiple R for the regression was significantly different from zero,

Table 13

Summary of Multiple Regression Analysis for Concurrent Prediction of General Severity Index Scores in Women Reporting Unwanted Sexual Intercourse (n = 57)

Variable	B	SE B	β	sr^2
RECENCY	-.004	.003	-.148	.02
FREQUENCY	.013	.013	.119	.01
SOCTOT***	-.019	.004	-.559	.24
CSIRATIO	.002	.002	.126	.01
FORCE	.088	.114	.107	.01
RESIST	-.068	.055	-.166	.02
HELP	.085	.127	.083	.01

multiple R = .59; R^2 = .35; adjusted R^2 = .26

Note. RECENCY = recency of the sexually coercive incident; FREQUENCY = number of times the woman reported being sexually coerced; SOCTOT = the total score on Sense of Coherence Questionnaire; CSIRATIO = the ratio between the tertiary level factors (Engagement and Disengagement) of the Coping Strategies Inventory; FORCE = degree of force used by the man; RESIST = type of resistance offered; HELP = whether or not the woman sought help. ***p < .001.

$F(7, 49) = 3.80$, $p < .01$. However, only one of the predictor variables contributed significantly to prediction of GSI scores, SOC total (β = -.559). The seven IVs in combination accounted for 35% (26% adjusted) of the variability in GSI scores.

In addition to the multiple regression, bivariate correlations were conducted to examine the relationship between the predictors and the criterion (see Table 14).

Table 14

Bivariate Correlations Between Predictors and Criterion in Women Reporting Unwanted Sexual Intercourse Before College

Variables	2	3	4	5	6	7	8
1. GSI	-.07 n=67	.10 n=70	-.51*** n=69	.05 n=58	.16 n=63	.18 n=69	.10 n=69
2. RECENCY	--	.12 n=68	-.07 n=67	-.11 n=55	.25 n=61	.03 n=67	.10 n=67
3. FREQUENCY		--	-.04 n=70	.06 n=58	.13 n=64	.20 n=70	.13 n=70
4. SOCTOT			--	.22 n=57	-.26* n=63	-.09 n=69	.07 n=69
5. CSIRATIO				--	-.11 n=53	-.15 n=57	.23 n=57
6. FORCE					--	.46*** n=64	.13 n=64
7. RESIST						--	-.04 n=70
8. HELP							--

Note. GSI = General Severity Index; RECENCY = recency of the incident; FREQUENCY = number of times the woman reported being sexually coerced; SOCTOT = the total score on Sense of Coherence; CSIRATIO = the ratio Engagement and Disengagement of the Coping Strategies Inventory; FORCE = force used by the man; RESIST = type of resistance offered; HELP = whether or not the woman sought help. *$p < .05$. ***$p < .001$.

There were three significant relationships. Similar to the multiple regression analysis, there was a significant inverse relationship between SOC and GSI, $r = -.51$, $p < .001$. The greater the SOC total score, the less severe were psychological symptoms endorsed on the Brief Symptom Inventory, suggesting better adjustment. There was also an inverse relationship between SOC and the amount of force

used by the man, $r = -.26$, $p < .05$. Thus, lower SOC scores were associated with a greater degree of force used by the man. Finally, there was a positive relationship between the degree of force used by the man and the amount of resistance offered by the woman, $r = .46$, $p < .001$, such that greater force was associated with greater resistance.

Longitudinal Sample

Prospective Predictors Analysis

Multiple regression analysis was performed using a subsample of subjects (i.e., women that reported at least one incident of unwanted sexual intercourse between the first and last assessment). The General Severity Index (GSI) at the second or third assessment (dependent on when the incident of unwanted sexual intercourse occurred) served as the dependent or criterion variable and four independent or predictor variables (number of times the woman reported being sexually coerced, the total score on SOC, the ratio between engagement and disengagement factors from the CSI, and the GSI at the first assessment) were included from the last assessment prior to the incident/event. Table 15 displays the unstandardized regression coefficients (B), the standard error of the coefficients (SE B), the standardized regression coefficients (β), the semipartial correlations (sr^2), and multiple R, R^2, and adjusted R^2. The multiple R

Table 15

Summary of Multiple Regression Analysis for Prospective Prediction of General Severity Index Scores in Women Reporting Recent Unwanted Sexual Intercourse (n = 27)

Variable	B	SE B	β	sr^2
GSI1**	.621	.205	.606	.216
SOCTOT1	-.006	.007	-.170	.019
CSIRATIO1	.001	.002	.092	.006
FREQUENCY1	-.021	.086	-.041	.001

multiple R = .69

R^2 = .48

adjusted R^2 = .39

Note. FREQUENCY1 = number of times the woman reported being sexually coerced at the previous assessment; SOCTOT1 = the total score on Sense of Coherence Questionnaire at the previous assessment; CSIRATIO1 = the ratio between the tertiary level factors (Engagement and Disengagement) of the Coping Strategies Inventory at the previous assessment; GSI1 = the General Severity Index score at the previous assessment. **$p < .01$.

for the regression was significantly different from zero, $F(4, 22) = 5.13$, $p < .01$. However, only one of the IVs contributed significantly to prediction of subsequent GSI scores, GSI from the previous assessment ($\beta = .606$). All four predictors in combination accounted for 48% (39% adjusted) of the variability in subsequent GSI scores.

In addition to the multiple regression, bivariate correlations were conducted to examine the relationship between the predictors and the criterion (see Table 16). There was one significant relationship. Similar to the

Table 16

Bivariate Correlations Between Prospective Predictors and Criterion in Women Reporting Recent Unwanted Sexual Intercourse

Variables	1	2	3	4	5
1. GSI2	--	.69*** n=28	-.27 n=27	-.18 n=24	-.06 n=27
2. GSI1		--	-.30 n=27	-.40 n=24	.02 n=27
3. SOCTOT1			--	-.28 n=23	.03 n=26
4. CSIRATIO1				--	-.37 n=23
5. FREQUENCY1					--

Note. FREQUENCY1 = number of times the woman reported being sexually coerced at the previous assessment; SOCTOT1 = the total score on Sense of Coherence Questionnaire at the previous assessment; CSIRATIO1 = the ratio between the tertiary level factors (Engagement and Disengagement) of the Coping Strategies Inventory at the previous assessment; GSI1 = the General Severity Index score at the previous assessment. ***$p < .001$.

multiple regression analysis, there was a significant relationship between the GSI assessed before the incident and GSI assessed after the incident, $r = .69$, $p < .001$.

Concurrent Predictors Analysis of Incident Characteristics

A multiple regression analysis was performed using a subsample of subjects (i.e., women who reported at least one incident of unwanted sexual intercourse between the first and last assessment). This subsample was particularly small ($n = 20$) because of missing data on one or another of the

variables. The General Severity Index (GSI) was used as the dependent or criterion variable and five independent or predictor variables were also used: a) recency of the sexually coercive incident (RECENCY), b) number of times the woman reported being sexually coerced (FREQUENCY), c) degree of force used by the man (FORCE), d) type of resistance offered (RESIST), and e) whether or not the woman sought help (HELP). Table 17 displays the unstandardized regression coefficients (B), the standard error of the coefficients (SE B), the standardized regression coefficients (β), the semipartial correlations (sr^2), and the multiple R, R^2, and adjusted R^2. The multiple R for the regression was not significantly different from zero, $F(5, 14) = .86$, $p > .05$. However, the indices for the individual predictors suggested some shared variance between some of the predictors and the criterion (GSI). Therefore, bivariate correlations between the predictors and the criterion were conducted. These analyses, however, revealed only one significant correlation (see Table 18), that being between the amount of force used by the man and whether or not the woman sought help, $r = .48$, $p < .05$. That is, the likelihood that the woman would seek help increased with greater force used by the man.

Table 17

Summary of Multiple Regression Analysis for Concurrent Prediction of General Severity Index Scores in Women Reporting Recent Unwanted Sexual Intercourse (n = 20)

Variable	B	SE B	β	sr^2
RECENCY	-.034	.094	-.092	.007
FREQUENCY	-.009	.053	-.040	.001
RESIST	.197	.131	.366	.124
HELP	-.219	.259	-.228	.039
FORCE	.457	.364	.340	.086

multiple R = .48

R^2 = .23

adjusted R^2 = -.04

Note. RECENCY = recency of the sexually coercive incident; FREQUENCY = number of times the woman reported being sexually coerced; RESIST = type of resistance offered; HELP = whether or not the woman sought help; FORCE = degree of force used by the man.

Table 18

Bivariate Correlations Between Concurrent Predictors and Criterion in Women Reporting Recent Unwanted Sexual Intercourse

Variables	2	3	4	5	6
1. GSI	-.03 n=24	.05 n=27	.03 n=28	.04 n=28	.16 n=28
2. RECENCY	--	-.01 n=28	-.19 n=24	-.33 n=24	.32 n=21
3. FREQUENCY		--	-.24 n=27	-.01 n=27	-.11 n=22
4. RESIST			--	-.02 n=28	-.04 n=23
5. HELP				--	.48* n=23
6. FORCE					--

Note. RECENCY = recency of the sexually coercive incident; FREQUENCY = number of times the woman reported being sexually coerced; RESIST = type of resistance offered; HELP = whether or not the woman sought help; FORCE = degree of force used by the man. *$p < .05$.

DISCUSSION

Overview

The objective of this study was to assess and predict psychological adjustment in first-year undergraduate women who reported unwanted sexual intercourse and to provide descriptive information about unwanted sexual intercourse, such as estimates of prevalence and incidence, at a Northern Plains state university. The study used both a cross-sectional and longitudinal design to accomplish this objective. Questionnaires were mailed to the entire incoming class of female students, with follow-up questionnaires sent two more times during the academic year to women responding to the first mailing. The cross-sectional, or first assessment, sample was used for concurrent prediction of psychological adjustment using the woman's total score on a measure of Sense of Coherence, the woman's previous experience with sexually coercive incidents, her behaviors associated with the most recent incident (e.g., the type of resistance she offered, whether she sought help sometime after the incident, and a global measure of coping behaviors), and variables related to the

incident (e.g., how recently it occurred, the degree of force used by the man).

The cross-sectional design also permitted estimation of lifetime prevalence rates of unwanted sexual contact and sexual coercion for women beginning college and comparisons on several variables (e.g., SOC, adjustment, demographic data) between women reporting unwanted sexual intercourse and those denying any sexually coercive experiences. The women reporting unwanted sexual intercourse were further subdivided into those that had been verbally coerced or pressured into unwanted sexual intercourse and those that had been physically forced into intercourse or had been coerced through the use of drugs or alcohol.

The longitudinal part of the study examined prospective prediction of psychological adjustment following an incident of unwanted sexual intercourse during the women's first year of college. The variables used as predictors were collected at the assessment prior to the incident. These included adjustment, the total score on a measure of Sense of Coherence, a global measure of coping, and the number of sexually coercive incidents experienced prior to the most recent incident. Concurrent prediction of adjustment was also performed with this subsample of women using variables associated with the current or most recent incident (e.g., degree of force used by the man, the resistance used by the

woman, whether or not the woman sought help). Finally, the longitudinal design also provided an estimate of incidence, or number of new cases occurring within the time frame of this study, the academic year.

Response Rate, Prevalence, and Incidence

Over 50% of the first questionnaires mailed out were returned, and over 60% of questionnaires on each of the two subsequent assessments were returned, with close to half (49%) of the identified first mailing responders returning questionnaires at all three assessments and two-thirds (67%) of them returning at least one additional questionnaire. Unfortunately, there were 29 (7%) subjects that could not be matched to a subject in the first mailing because their personally-selected identification numbers did not match any of the first assessment numbers. They also could not be reliably matched by other means. Thus, despite some minor problems with data collection, the present study had a respectable response rate. This response rate might have been obtained because of the use of individual phone contacts, since a similar study assessing college women with the Sexual Experiences Survey without phone contacts obtained only a 28% response rate (Copenhaver & Grauerholz, 1991).

The samples in this study were highly homogeneous, with negligible demographic changes across assessments. On most

variables, differences across assessments varied by only 1 to 2%. The greatest variability was in the population size of subjects' hometowns which differed by about 5% from the first to the last assessment, with a greater percentage of subjects reporting hometowns of less than 10,000 on the first assessment. The samples were largely Caucasian (95-96%), never married (98-99%), and 18-19 years old (97-98%). They were largely from small towns (56-61% were from towns of populations of 10,000 or less) in North Dakota (59-61%) or Minnesota (29-31%).

Prior to beginning their first year of college, 14.9% of women reported being a victim of an act that met legal definitions for rape or attempted rape. In North Dakota the legal term for rape is "Gross Sexual Imposition," which includes anal and oral penetration, and/or use of alcohol and drugs when unknown to the victim (North Dakota Criminal and Traffic Law Manual, 1991). However, its important to make a distinction between the legal status of such event and the likelihood that the case will go to trial. That is, it is unlikely that all of these cases would be prosecuted. For example, although it is illegal to substantially impair the victim's ability to resist a sexual act by giving her intoxicants without her knowledge, or to engage in a sex act in which the victim is unaware that a sex act is being committed (e.g., passed out), such cases are less likely to

go to trial than those in which there was physical force used by the man. Thus, using more conservative criteria, 9.2% of the sample reported a completed or attempted forced sexual act (i.e., subjects endorsing Sexual Experiences Survey items 5, 9, and 10). For purposes of comparison with another collegiate sample, I shall use the former definition in reporting incidence data, unless otherwise indicated.

Over the eight month period from the first to the third assessment, 7.2% of respondents reported experiencing an incident that met legal definitions for Gross Sexual Imposition (North Dakota Criminal and Traffic Law Manual, 1991). This number converts into a victimization rate of 54 per 1000 during a 6-month period (the standard time period used in the FBI's National Crime Survey). Using the narrower definition of only actual or attempted vaginal sexual intercourse through use of force (i.e., this latter definition excludes reports of forced anal or oral intercourse, and intercourse because a man gave the woman alcohol or drugs), the victimization estimate drops to 20 per 1000 during a 6-month period.

These prevalence estimates are about one-half those reported by Koss et al. (1987). For example, 27.5% of Koss et al.'s sample reported at least one incident that met legal definitions of rape, whereas only 14.9% of my sample reported a similar incident. Similarly, when using the

narrow definition of attempted or completed penile-vaginal rape, the victimization estimate in this study is about one-half that reported by Koss and her colleagues (20 vs. 38 per 1000 during a 6-month period). When using the broader definition of rape (i.e., including oral or anal penetration, and use of alcohol or drugs), my estimates are about two-thirds of those reported by Koss et al. (54 vs. 83 per 1000 during a 6-month period).

There are several reasons to be cautious when making these comparisons. Although there are some similarities between the sample used in Koss et al. (1987) and the sample in this study (e.g., both are college samples, both assessed sexual experiences with the Sexual Experiences Survey), the differences are nonetheless substantial. For example, the sample in this study was much less diverse. It was not as representative of college women as the Koss et al. sample because the entire sample was comprised of first-year students, the participants were predominately from small towns in two largely rural states in relatively low-crime areas of the country, and there was virtually no racial diversity. Finally, this sample likely had a greater self-selection bias than the Koss sample. Thus, despite being unable to say definitively why these victimization differences exist between this study and Koss's study, they are likely due, in part, to differences in the sample and

how the data were collected. That is, one would expect the prevalence estimates to be lower for a younger sample. One would also expect prevalence estimates to be higher in a national sample (such as Koss et al.) than in the current study's sample which was from a relatively low-crime region of the country. It is unclear what role, if any, the self-selection bias may have had because there are no data from non-responders. Because of the differences between this sample and the Koss et al. sample and the differences in victimization estimates it is important to be cautious about generalizing the results from this study beyond the population sampled (i.e., first-year female students at a rural, Northern Plains state university).

Cross-Sectional Sample

Given this study's objective to predict psychological adjustment, I first examined the ability of the selected variables to predict adjustment concurrently. I hypothesized that among women who reported a history of sexual victimization, the proximity to the most recent sexually coercive incident, the total number of sexually coercive incidents the woman had experienced, a measure of Sense of Coherence, coping behavior, the degree of force used by the man, the type of resistance offered, and whether or not the woman sought help would each contribute to the prediction of adjustment.

Bivariate correlations between the predictor variables and a woman's adjustment score (GSI) revealed three significant correlations. First, the correlation between SOC and GSI was significant indicating that higher SOC scores were associated with lower adjustment. This finding is consistent with previous research examining relationships between SOC and psychological and physical health (e.g., Carmel & Bernstein, 1989; Holm et al., 1988; McSherry, et al., 1991). Second, there was a significant inverse relationship between SOC and the amount of force used by the man. That is, lower SOC scores were associated with relatively greater amounts of force used by the man. The reason there is a relationship between these variables is unclear, since correlation does not imply causation. However, two explanations seem to have merit. First, a more physically traumatic unwanted sexual experience might have deleterious effects on a woman's sense of coherence, especially during its formative years which includes adolescence and early adulthood (Antonovsky and Sagy, 1986). It is also possible, however, that a woman with a low SOC might be particularly vulnerable to physically abusive, sexually aggressive men. This explanation has merit only when the victim and perpetrator are engaged in some form of relationship prior to the incident and obviously would not play a role in stranger rape incidents. However, given that

most incidents in this sample conform to the former situation, such an explanation must be considered.

Finally, there was a significant correlation between the degree of force used by the man and the amount of resistance offered by the woman. This relationship seems logical because physical resistance would seem a more natural response only when faced with physical force and would likely not be a first response when dealing with other forms of coercion such as verbal persuasion (e.g., close to half of the sample reported experiencing unwanted sexual intercourse because of verbal pressure).

As a means of examining these predictors in context or combination, a multiple regression was conducted. Interestingly, in the concurrent regression predicting the General Severity Index of the Brief Symptom Inventory, many of the rationally derived variables failed to predict adjustment. In some regards this finding is not all that surprising since reviews of the literature have been inconclusive about the relationship between these variables and adjustment (e.g., Hanson, 1990; Lenox & Gannon, 1983). For example, with the variable of force used by the man, one study found that women coerced by physical force but without physical injury showed better adjustment than those coerced by non-physical force (Mynatt & Allgeier, 1990), while other studies revealed the opposite relationship between degree of

force, particularly when there is life threat and physical injury, and the development of significant adjustment problems such as PTSD (e.g., Bownes et al., 1991; Kilpatrick, et al., 1989).

Only the total score on a measure of Sense of Coherence (SOC) was a significant predictor. Thus, this study, like others (e.g., Carmel & Bernstein, 1989; Holm et al., 1988; McSherry, et al., 1991) that have examined relationships between SOC and measures of adjustment (e.g., depression, anxiety, physical distress), found an inverse relationship between SOC and the General Severity Index of the Brief Symptom Inventory. These results indicate that SOC is related to adjustment and suggest that women with a high Sense of Coherence who do experience an aversive sexual experience might be better able to deal with it.

Comparisons of women not reporting unwanted sexual contact with those reporting unwanted sexual intercourse revealed that these two groups differed in the following ways. First, women reporting unwanted sexual intercourse (USI) had lower mean total scores on a measure of Sense of Coherence than the non-sexually coerced group (NSC). The mean score for the NSC group (M = 126.1, SD = 14.6) was similar to the mean score in another sample of undergraduates (M = 129.5, SD = 24.5; Antonovsky, 1993). One explanation for this difference between the USI and NSC

groups is that the unpleasant experiences of unwanted sexual intercourse might have negatively influenced the development of these women's Sense of Coherence. Antonovsky and Sagy (1986) reported that life events from childhood and adolescence are related to SOC scores. Thus, it is reasonable that undesirable sexual experiences of childhood and adolescence affect women's global outlook on life, which has implications for handling life stress in the future. That is, if women's sexually coercive experiences result in a lower SOC, it suggests that they may view their world as less understandable, less manageable, and less meaningful (e.g., Resick, 1993). If these two groups' views differed enough, one would predict greater difficulty with stress management for the sexually coerced group relative to their cohorts who did not experience sexual coercion in their formative years. Consistent with Antonovsky's (1990) theoretical writing, lower SOC scores are associated with poorer health because of a greater disruption of physiologic homeostasis in response to stress and fewer of the benefits that come with successful resolution of a stressor. However, it may be premature to speculate on long-term health outcomes, since it is unclear if the SOC scores obtained with these populations are stable. That is, the current difference may reflect state differences rather than trait differences since the SOC construct theoretically

becomes stable during a person's late 20's and early 30's (Antonovsky, 1987). Continued longitudinal investigation of the differences between these two populations is warranted.

Despite the fact that these observed group differences on the SOC are consistent with Antonovsky's theory, they can also be explained in an alternate way; a way in which they are not necessarily caused by undesired sexual experiences. There may be something about a relatively high SOC that decreases risk for experiencing unwanted sexual intercourse, given these events occur in a non-random manner (e.g., Mynatt & Allgeier, 1990; Myers, Templer, Brown, 1984). In other words, women with a high SOC may avoid situations that are high-risk for sexually coercive incidents, they may more effectively resist or counter sexually coercive behaviors, and/or they may avoid or reject men with a likelihood of behaving in a sexually aggressive or even coercive manner.

The women reporting unwanted sexual intercourse (USI) also had higher General Severity Index (GSI) scores than the non-sexually coerced group (NSC). That is, the USI group endorsed higher average ratings on symptoms on the Brief Symptom Inventory. However, it is important to note that this group difference in the GSI scores does not appear to be clinically significant (.96 vs. .76). Thus, though statistically significant, the clinical implications of this group difference are unclear. What is interesting, however,

is that both groups are elevated above the mean GSI for a large stratified sample of non-patients (Derogatis & Melisaratos, 1983). In their group, the mean GSI score was .30 and the standard deviation was .31, suggesting the USI group was about two standard deviations above the mean of this national sample, while the NSC group was one and one-half standard deviations above the mean. Both groups were, however, below the mean for psychiatric outpatient populations (M = 1.32, SD = .72). Thus, although direct comparison with Derogatis & Melisaratos's (1983) sample has its limitations, it suggests the groups in this study are better adjusted than individuals seeking psychiatric services, but more poorly adjusted that the non-patient norming sample. It is likely, however, that the normative mean GSI score is higher in this population of first-year female undergraduates than a stratified, normal population. Previous literature does suggest that both adolescents and females report higher levels of psychological distress than older or male samples (e.g., Hovanitz, & Kozora, 1989; Ostrov, Offer, & Howard, 1989).

In a more detailed look at the differences in psychological adjustment between these groups, the same basic pattern emerged. The Symptom Dimensions of the BSI revealed that the USI group had significantly higher scores on seven symptom dimensions. These were Somatization,

Obsessive-Compulsive, Interpersonal Sensitivity, Anxiety, Hostility, Paranoid Ideation, and Psychoticism. The mean score differences ranged from .29 on the Obsessive-Compulsive dimension to .18 on Somatization. Once again, though statistically significant, the clinical implications of these group differences are questionable.

Therefore, although these two groups are distinct with respect to sexual experiences, the effect of these different sexual experiences on psychological adjustment appears negligible. Part of the reason these groups may not differ greatly in adjustment is that most women did not rate the severity of their unwanted sexual incidents very high. For example, one such severity rating was the extent to which the women reporting unwanted sexual intercourse considered their most recent experience as "rape". When rated on a 7-point Likert scale (1 = "definitely not rape"; 7 = "definitely rape"), the mean was 3.5, the mode was 2.0, and 70% of the group had a rating that was undecided or leaning toward viewing the event as something other than rape (i.e., a rating of 4 or less). Interestingly, even among the women who meeting legal definitions of rape (i.e., SES Items 8-10), nearly 60% were undecided or did not consider the event a "rape." This finding is very similar to another study in which 64% of women who had reported incidents that met various legal definitions of rape, felt they had never been

raped or were unsure (Copenhaver & Grauerholz, 1991). It is important to note that this finding does not necessarily mean the incident was not perceived as stressful. It may simply reflect that the woman's experience simply did not fit with her concept of rape.

In addition, even if the unwanted sexual intercourse incident had been a fairly traumatic event, it would be expected to have a lessening impact on adjustment over time. For example, most rape-related PTSD symptoms resolve themselves without treatment during the first three months after the incident (e.g., Steketee & Foa, 1987). The incidents reported in this study had not occurred very recently. Subjects' most recent experience with an unwanted sexual experience had occurred on average one and one half years prior to this assessments, with half the sample reporting it occurred over a year earlier.

Thus, given that most incidents reported by the USI group were not recent and because some elevations on the GSI might be expected based solely on the stress associated with moving away from home and beginning college, I examined differences in GSI scores at the second assessment, comparing women reporting unwanted sexual intercourse at some point in the previous four and one-half months (n = 16) with those that still denied experiencing any type of unwanted sexual contact (n = 135). Only women that

responded at both assessments were used in this comparison. I hypothesized that the stress associated with the transition to college would have lessened, while the negative impact of unwanted sexual intercourse would increase as function of temporal proximity.

This comparison revealed that the NSC group dropped some from a mean of .75 (SD = .49) to a mean of .68 (SD = .52), while the USI group increased from a mean of 1.15 (SD = .55) to a mean of 1.22 (SD = .55)[1]. Thus, among the small sample of women reporting unwanted sexual intercourse between the first and second assessment, adjustment scores approached the range typically seen in psychiatric outpatients (M = 1.32, SD = .52). However, despite the drop in GSI at the second assessment, the NSC control group continued to have a higher mean GSI than the non-patient sample (.68 vs. .30) reported in Derogatis and Melisaratos (1983). Thus, although the changes were in expected directions, it remains unclear if this group difference is clinically meaningful.

There is one other USI-NSC difference worth noting. The USI group differed in the way they responded to the Coping Strategies Inventory (CSI) when compared with the NCS

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[1]These findings are not reported in the Results section because the decision to look at these differences was made post-hoc, in the context of interpreting the findings.

group. It is important to note that this comparison needs to be interpreted cautiously because the women reporting unwanted sexual intercourse completed the CSI by reporting how they had coped with their only, or most recent incident of unwanted sexual intercourse. In contrast, since by definition the NSC group had not experienced any unwanted sexual incidents, they were asked to imagine how they would cope with an incident of unwanted sexual intercourse. With this caveat in mind, the NSC group, in contrast to the USI group, reported they would use more engaging and less disengaging strategies. It appears that the NSC group might have overestimated their ability to cope with unwanted sexual intercourse, and perhaps underestimated the emotional impact of such an event. Thus, although there may be negligible differences in adjustment after the passage of a sufficient amount of time, women reporting unwanted sexual intercourse still recall their difficulty in dealing with such an event, while the NSC group believes they would use the intuitively more "adaptive" strategies (e.g., problem solving, emotional expression) and less of the "maladaptive" strategies (e.g., self-criticism, problem avoidance).

These findings have an interesting parallel to a study by Harris and Parsons (1985). While they did not compare actual coping with imagined coping, they found differences in how female undergraduates imagined they would cope with a

sexual assault compared with other criminal assaults (e.g., robbery). The women believed they would cope more actively with the sexual assault. Harris and Parsons (1985) felt that women may believe they would cope actively to resist sexual assault, and thus when faced with evidence (e.g., as a juror) that another woman did not cope as actively, she may be more likely to blame the victim for the assault. They also speculate that she would be more likely to blame herself if she were sexually assaulted and find her coping inconsistent with her own expectations about how she would deal with that situation (Harris & Parsons, 1985). On the other hand, it is possible that the NSC groups' belief that they would use more "adaptive" strategies is accurate and is related to their higher SOC levels (previously discussed).

Regardless of the validity of either of these explanations, the relationship between coping and adjustment associated with unwanted sexual intercourse is unclear. It is unknown which types of coping strategies might be more adaptive in the long run. For example, Antonovsky (1990) posits it is the flexible use of coping strategies that allows a person to resolve stressors. The implication is that there may be more than one way to resolve stressors. Individuals with a wide repertoire of strategies that can match the coping strategy with the stressor, thereby leading to successful long-term resolution of problems. Thus, most

strategies probably cannot be categorically rejected as "maladaptive". However, I would speculate that disengaging strategies are more "maladaptive" than engaging strategies since disengaging strategies lack the beneficial properties of long-term problem resolution, though they may offer some temporary relief, and are often associated with poorer adjustment or health problems (Holm, Holroyd, Penzien, & Hersey, 1986). This hypothesis is supported by others' findings with rape victims. For example, certain coping strategies, such as self-blame, remaining at home, or withdrawing from others (examples of disengaging strategies), have been associated with less successful post-rape adjustment, especially depression (Meyer & Taylor, 1986), while women who actively engage in coping have been shown to recover faster than those not as active (Burgess & Holmstrom, 1979). Clearly, more precise information about coping behaviors associated with positive adjustment is needed.

In addition to examining factors such as recency and severity, I believed it would be important to separate the USI group into women reporting unwanted sexual intercourse due to "continual arguments and pressure" (USI-Verbal) and those reporting unwanted sexual intercourse for some other reasons such as "a man threatened or used some degree of force" or "a man gave you drugs or alcohol" (USI-Other). If

these two subgroups of the USI group differed, then the resulting heterogeneity could be obscuring differences between the USI and the NSC groups. Interestingly, these two subgroups differed only in a couple of minor ways when compared on the same variables as were used in the NSC-USI comparison. First, the USI-Verbal group came from slightly larger hometowns than the USI-Other group. Second, the USI-Other group was more likely than the USI-Verbal group to use Problem Avoidance relative to other coping strategies. That is, the USI-Other group was more likely to deny they had problems, and to avoid thoughts and behaviors associated with the stressor (e.g., "I went along as if nothing were happening.").

The fact that these two sub-groups of the USI were quite similar is especially interesting given that the two groups differed on several characteristics of their most recent incident of unwanted sexual intercourse. When compared to the USI-Verbal group, the USI-Other group was more likely to have experienced forced sexual intercourse, was more likely to have offered physical resistance, and was more likely to have viewed the event as "rape." Nevertheless, there were no differences on variables such as psychological adjustment or Sense of Coherence.

Similar to the above discussion pertaining to the USI-NSC group comparisons, the lack of differences between these

two USI subgroups may simply reflect the fact that the current influence of these incidents/stressors is minimal because of the length of time since their occurrence. Alternatively, the lack of subgroup differences may also reflect that when women experience unwanted sexual intercourse, whether by force or by verbal pressure, they feel violated and experience changes in adjustment (albeit slight this far removed from the incident). Based on previous research (e.g., Lenox & Gannon, 1983), it is possible the USI-Verbal group may have experienced more guilt or more self-blame because of the lack of force used by the man, while the USI-Other group may have experienced more anxiety or helplessness because they were in a situation where they had little control due to the physical force used by the man. Both groups may have experienced feelings of distress, but attributed these feelings to different sources. However, the failure to find group differences on the Self-Criticism factor of the CSI and on the depression and anxiety-related symptom dimensions of the BSI (e.g., Anxiety, Phobic Anxiety) in this study does not support this interpretation. Thus, it seems that the most parsimonious interpretation of this group comparison is that over time the type of coercion used has little differential effect.

In summary, the NSC and USI groups primarily differed on their Sense of Coherence scores. Although there was a statistical group difference on the General Severity Index, it does not appear to be clinically relevant, at least not at the time of assessment. Even when the USI group was divided into women who were verbally coerced and those who were coerced by some other means (i.e., physical force, given drugs or alcohol), the differences seen in this study were minor. It may be that any form of unwanted sexual intercourse proves to be disruptive, although at the time of assessment the groups seem to have returned close to "normal."

One intriguing difference between the USI and NSC groups occurred when examining how they coped (or would cope) with unwanted sexual intercourse. Women who had never experienced unwanted sexual contact believed they would use more engaging and less disengaging strategies. It is unknown whether this belief is accurate or represents an overestimation of their coping resources and/or an underestimation of the impact of unwanted sexual intercourse. This difference between expectations and reality may lead to self-blame (Harris & Parsons, 1985).

Longitudinal Sample

Bivariate correlations were conducted to examine relationships between pre-incident predictors and post-

incident adjustment and between variables associated with the incident. Among the variables in the prospective prediction analysis, only one correlation was significant. As one might expect, there was a strong positive relationship between the pre- and post-incident GSI scores. Among the incident variables used in concurrent prediction analysis, there was also only one significant correlation: a positive relationship between the amount of force used by the man and the likelihood that the woman would seek help. This relationship suggests that the more severe the incident of sexual coercion, the more likely the woman is to seek help. This may reflect that as the incident approximates the woman's preconceived ideas about what constitutes rape, the more likely she is to feel seeking help is warranted.

A prospective multiple regression found that unlike the cross-sectional data analysis in which SOC predicted GSI, this relationship was not significant in prospective analyses. Adjustment before the incident was the only significant predictor of subsequent adjustment. Thus, although pre-incident SOC was expected to be able to predict post-incident adjustment, it was not able to account for a significant proportion of variance. Instead, psychological adjustment post-incident was highly related to only pre-incident adjustment. Even a regression equation using characteristics of the most recent incident of unwanted

sexual intercourse to predict GSI (concurrent prediction) was unable to account for variability in adjustment scores. These findings have some limitations based on the sample size. Nevertheless, they suggest that it is very important to control for pre-incident adjustment. That is, the variability in adjustment can be best accounted for by pre-incident adjustment. That does not mean that unwanted sexual intercourse does not impact adjustment. Nor does it imply that women who have experienced unwanted sexual intercourse and are maladjusted after the incident were necessarily maladjusted before the incident. Similar to some previous findings (e.g., Sales, Baum, & Shore, 1984), these findings simply suggest that pre-incident adjustment offers the best predictor of post-incident adjustment.

Many studies (e.g., Bownes, et al., 1991; Burgess & Holmstrom, 1979; Meyer & Taylor, 1986) that have looked at factors such as coping or incident characteristics, have not taken pre-assault adjustment into consideration. While coping behaviors and incident characteristics can be expected to impact adjustment and may have clinical relevance in assisting recovery from unwanted sexual intercourse, the woman's psychological adjustment may actually be more parsimoniously explained by examining pre-rape adjustment. As Hanson (1990) reported, negative reactions to stressful events are strongest in individuals

with prior adjustment difficulties. Thus, rape and other forms of sexual coercion are clearly not the only things effecting post-incident adjustment.

Limitations

This study has several limitations which need some consideration. First, there is a self-selection bias among subjects responding to this study. Even though there was a good response rate, it is unclear if the subjects participating in the study were different from those not participating. Second, the sample is highly homogeneous and thus it is important to be cautious about generalizing the results from this study beyond the population sampled (i.e., first-year female students at a rural, Northern Plains state university).

Third, it is hypothesized that the SOC construct does not become stable until the end of the first decade of adulthood, late 20's to early 30's, (Antonovsky, 1987) and thus its malleability during late adolescence and early adulthood may have diminished its ability to predict adjustment in this study. In other words, given the age of the participants in this study, SOC may have been more of a state than a trait measure.

Fourth, the sample of women reporting new incidents of unwanted sexual intercourse was smaller than recommended for some of the multiple regressions (Tabachnick & Fidell,

1989). This problem of small sample size was exacerbated by missing data. Furthermore, the subject pool of women reporting unwanted sexual intercourse during the course of the academic year was not large enough to make a distinction between women who reported unwanted sexual intercourse (n = 15) prior to our survey and those who reported such an incident for the first time after completing the first assessment (n = 12). Part of the problem with obtaining an adequate sample size is that it takes a very large sample to study a relatively low base rate event such as rape or attempted rape. This study found that over a 6 month period 54 women per 1000 reported new incidents, more and than half were likely not reporting their first rape or attempted rape. This finding is similar to Kilpatrick, Edmunds, & Seymour (1992) finding that more than 60% of forcible rape victims in their sample had experienced their first rape before the age of 18, with half of them experiencing forcible rape before age 11. Thus, despite the importance of pre-incident adjustment in predicting post-incident adjustment, it remains very difficult to get these data on many women before there first sexual assault. While there is some evidence that making this distinction is not important (e.g., Marhoefer-Dvorak, et al., 1988), other research suggests previous victimization does significantly impact adjustment (e.g., Hanson, 1990; Resick, 1993; Ruch &

Leon, 1983). Given the number of women reporting their first sexual victimization during childhood or adolescence, it appears that prospective and longitudinal studies that begin during childhood may be the best way to resolve the importance of making this distinction.

Future Directions

Based on the results of this study, it will be important to continue to search for the factors that can account for the variability in adjustment after incidents of unwanted sexual intercourse and after other life stressors. The findings of this study emphasize the importance of controlling for pre-incident adjustment, which by definition requires a longitudinal study design. Thus, it will be valuable to follow these women through the remainder of their college years. Unfortunately, additional women in this sample of college undergraduates will experience unwanted sexual intercourse. Among those that do, this study will have the benefit of having pre-incident adjustment data. Continuing to follow these women also can contribute valuable information regarding their changes in adjustment as a function of time. Finally, it will provide important information about Sense of Coherence in early adulthood.

Theoretical writing suggests that further work using Sense of Coherence in women reporting rape appears

indicated, because it measures the extent to which a person views their world as comprehensible, manageable, and meaningful (Antonovsky, 1987). It is these views that are challenged when a woman experiences rape. Rape has been described as destroying women's perceptions that they live in a "predictable, controllable, meaningful world" (Resick, 1993). Thus, one might expect adjustment to be a function of the extent to which these perceptions vary across rape victims. That is, likely not all women who experience a rape have this perception destroyed, or at least those that return to a view of their world as predictable, manageable, and meaningful will show better adjustment.

Future research should give careful thought to selecting participants who have experienced a subjectively significant stressor. In this study, it appears that the severity of the incidents was not great enough to create wide variability among subjects on the measure of adjustment, the GSI. It is possible that either the instrument was not sufficiently sensitive or the incidents reported were not severe enough to affect adjustment. It may be that some incidents of unwanted sexual intercourse are not seen as severe stressors. Limiting a study such as this to victims of forcible rape would likely alleviate this concern. Based on research with victims of forcible rape, there is good evidence that they experience more

psychological problems, including PTSD, than controls, including victims of other violent crimes (e.g., Bownes, et Kilpatrick, et al., 1992, Steketee & Foa, 1987).

In addition to understanding the variability in adjustment, further work should also be aimed at developing and refining interventions to minimize the impact of traumatic life events (e.g., Stress Inoculation Training, Prolonged Exposure). When examining and comparing the effectiveness of various interventions, it will be important consider the spontaneous recovery toward pre-incident adjustment that occurs in the first three months (Steketee & Foa, 1987). More importantly, research should be undertaken to find ways to prevent the occurrence of traumatic life events such as rape from happening in the first place (Fischoff, Furby, & Morgan, 1987). The current study provides a baseline estimate of unwanted sexual contact in first-year female undergraduates, which would allow a study to determine whether a campus wide intervention (e.g., education about rape myths) could impact incidence rates.

Conclusion

This study found that among women reporting unwanted sexual intercourse (USI group) before beginning college, a measure of the Sense of Coherence construct was a good concurrent predictor of psychological adjustment. Many other variables that might be expected to be associated with

adjustment (e.g., recency, degree of force used by the man) were not significant predictors. Compared with women who denied any form of unwanted sexual contact (NSC group), the USI group had lower SOC scores and higher GSI scores, although the latter difference did not appear to be clinically meaningful. Dividing the group into USI-Verbal and USI-Other also revealed fairly minor differences. Mainly, the latter group was more likely to use problem avoidance coping strategies.

In an unconventional comparison, the NSC group reported they would use more engaging and less disengaging strategies if they had to cope with unwanted sexual intercourse. This contrasted with the self-reported coping strategies reported by the USI group when actually dealing with unwanted sexual intercourse. The NSC group may be underestimating the impact of such an incident and/or overestimating their capacity to cope; or these differences may actually reflect differences in coping behaviors in these two groups.

The prospective prediction component of this study found that pre-incident GSI scores were the only significantly predictors of post-incident GSI scores. Pre-incident SOC scores could not account for a significant amount of the variability in post-incident GSI scores, nor could characteristics of the incident, suggesting the importance of controlling for pre-incident adjustment when

investigating a woman's psychological adjustment following a traumatic sexual incident.

This study is important because of its longitudinal study of women's psychological adjustment following sexually coercive events. This study adds to the existing data pointing to the importance of controlling for pre-incident adjustment when looking at adjustment following a sexually traumatic event. This study also offers some preliminary indications that further work with the Sense of Coherence construct might be helpful in understanding adjustment difficulties in victims of sexual trauma.

APPENDIX A

SURVEY ITEMS

(The survey sent to subjects had the Sense of Coherence Questionnaire, Antonovsky, 1987, followed by the Brief Symptom Inventory, Derogatis & Spencer, 1982, then the following demographic data)

1. Today's Date _____
2. Your home state _____
3. Population of your hometown
   _____ a. less than 1000
   _____ b. 1000 to 10,000
   _____ c. 10,000 to 25,000
   _____ d. 25,000 to 50,000
   _____ e. 50,000 to 100,000
   _____ f. 100,000 to 500,000
   _____ g. more than 500,000
4. Your Age _____
5. Racial Background
   _____ a. African-American
   _____ b. Asian or Pacific Islander
   _____ c. Caucasian
   _____ d. Hispanic
   _____ e. Native American
   _____ f. Other _____
6. Marital Status
   _____ a. Never married
   _____ b. Married
   _____ c. Separated
   _____ d. Divorced
   _____ e. Widowed

(Next came the Sexual Experiences Survey, Koss, Gidycz, & Wisniewski, 1987, numbered 7 through 16)

If you answered YES to at least one of questions 12 through 16:

Go directly to question 17 on the next page. Respond to the questions thinking about the most recent episode in which you were forced into sexual intercourse or other sex acts against your will (as described in any of questions 12 - 16).

If you answered NO to all of questions 12 through 16:

Read the following vignette, then respond to the items on pages 9 and 10 imagining that the situation described below actually happened to you.

Imagine that you met a male student at a party several weeks ago. Since that party, you had spoken with him on several occasions when you saw him on campus. You thought it would be fun to go on a date with him and so when he asked you out, you consented. He took you out to dinner at a nice restaurant and then to a movie. He insisted on paying for the evening. After the date he invited you to stop by his apartment for a drink and you accepted his invitation. After being at his apartment for about an hour, he began to force himself on you. He used physical restraint and forced you to have vaginal intercourse with him even though you did not want to.

Go directly to page 9. Skip questions 17 through 21 on page 8. Respond to those items pretending the event described above has already occurred. Try to imagine how you would have reacted.

17. What was your relationship to the assailant?
_____ a. stranger
_____ b. seen before
_____ c. date or friend
_____ d. boyfriend
_____ e husband or ex-husband
_____ f. relative

18. What was the degree of force used by the assailant? (Check all that apply)
_____ a. verbal intimidation or threats
_____ b. physical restraint (e.g., held you down)
_____ c. physical violence (e.g., slapped, beat, choked)
_____ d. displayed a weapon (e.g., knife, gun)
_____ e. used a weapon

19. What type of resistance did you use? (Check all that apply)
_____ a. None
_____ b. Verbal pleas or requests
_____ c. Verbal threats
_____ d. Physical resistance
_____ e. Other (please specify) _____

20. From whom did you seek help in coping with this event? Check all that apply and indicate how soon after the event you contacted that person. Specify hours, days, or weeks.
I told:
_____ a. A family member _____ after the incident.
_____ b. A friend _____ after the incident.
_____ c. A member of the clergy _____ after the incident.
_____ d. A medical doctor _____ after the incident.
_____ e. A counselor or psychologist _____ after the incident.
_____ f. A person on crisis line _____ after the incident.
_____ g. A police officer _____ after the incident.
_____ h. No one
_____ I. Other_____

21. To what extent would you consider this event rape?

1	2	3	4	5	6	7
definitely not rape						definitely rape

(This was followed by the Coping Strategies Inventory; Tobin, Holroyd, & Reynolds, 1984)

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