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The Effect of Alcohol on Women's Detection of Risk in a Date Rape Analogue

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THE EFFECT OF ALCOHOL ON WOMEN'S DETECTION OF RISK IN A DATE RAPE ANALOGUE

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THE EFFECT OF ALCOHOL ON WOMEN'S DETECTION OF RISK IN A DATE RAPE ANALOGUE

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Research strongly suggests that alcohol is a risk factor for date rape for both victims and perpetrators (Abbey, 1991, Fritner & Rubinson, 1994; Miller & Marshall, 1987; Muehlenhard & Linton, 1987; Norris & Cubbins, 1992; Marx, Van Wie, & Gross, 1996). Many victims of sexual assault consume alcohol prior to being raped (Marx, et. al, 1999), and "early recognition of when a social situation with a male acquaintance or intimate partner has become threatening can aid a woman in preventing a serious incident of sexual aggression" (Norris, et al, 1999, p. 230). This study's purpose was to experimentally address the link between alcohol consumption and women's risk detection abilities in a date rape vignette. It was hypothesized that the consumption of alcohol decreased a woman's ability to detect increasing levels of risk in a date rape vignette as compared to the no-alcohol condition. Supplementary hypotheses predicted that alcohol consumption significantly impaired women's ratings of social pressure, social consequences, comfort level, proposed strategy, male aggressiveness, and female assertiveness as compared to the no-alcohol group. Results demonstrated that alcohol consumption to a .04% BAC significantly increased subject's decision latency scores. Alcohol also impaired ratings of comfort

level, interpersonal risk, proposed strategy, and social pressure. No differences were detected between groups on ratings of male aggressiveness and female assertiveness. These results indicated that alcohol significantly impaired women's risk detection and judgment as measured by a date rape vignette. Implications for these results and suggestions for future research are discussed.

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Marci Marroquin Loiselle, Ph.D.

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CHAPTER I

INTRODUCTION

Overview

Rape is defined as the sexual penetration of another person against his/her will by the use of force, threat of force, or verbal coercion (Bohmer, 1991). Benson, Charlton, and Goodhart (1992) estimated that one in four college-aged women has been the victim of a rape; 84% of victims knew their assailants and 57% of these assaults occurred while on dates. The prevalence of date rape is also higher among college students than it is outside of college communities. Women aged 16 to 24 are in the highest risk category, more than four times greater than any other group (Fritner & Rubinson, 1994). "In addition to the increased risk of sexual assault, college females are more likely to be assaulted by someone they know and less likely to successfully avoid these assaults when they are acquainted with the perpetrator" (Yeater, E. & O'Donohue, 1999, p. 739).

It also is important to note that many women are coerced into unwanted sexual activity in more subtle ways that may not meet the legal definition of rape (Emmers-Sommer & Allen, 1999). When regarding sexual assault on a continuum including more subtle forms of coercion, Koss claimed that over 50% of women have been sexually assaulted (Gavey, 1999, p. 60).

Rape has important and significant emotional consequences for victims. These effects generally involve trouble with establishing trust in relationships, fear, restriction of activities, sexual dysfunction, self-blame, and higher levels of general

psychological distress (Resnick, 1993). Within one week of a rape, 94% of women met the criteria for Acute Stress Disorder; symptoms persisted in 47% of these women after three months (Kilpatrick, Veronen, & Resnick, 1979). It is believed that trauma from a rape produces higher rates of Posttraumatic Stress Disorder (PTSD) than other traumas such as natural disasters (Calhoun & Wilson, 2000). In addition, rape-related PTSD symptoms such as fear and anxiety persist long after the diagnosis is no longer met (Calhoun & Wilson, 2000). It is also documented that victims of rape are at risk for revictimization (Wilson, et al., 1999).

When controlling for rape-related injuries, effects on health have been documented as well, such as immune suppression, pregnancy, and infection with HIV or other sexually transmitted diseases. In fact, rape victims are over three times as likely to be infected with HIV when compared with urban dwelling women (Calhoun & Wilson, 2000) and 92% show fear and concern about contracting HIV after an attack (Resnick, et al., 2002). Adolescent victims have an increased risk for disordered eating behaviors (Ackard & Newmark-Sztainer, 2002). Direct injury is also common, such as vaginal bleeding, tissue damage, and injuries resulting from escape or escape attempts (Gidycz & Koss, 1991). Research has shown that victims more frequently report poor health, limitations in functioning, and a lower likelihood of seeking medical care in the years following an attack than nonvictims (Gidycz & Koss, 1991).

Rape by an acquaintance often exerts a greater psychological toll than rape by a stranger (Yeater & O'Donohue, 1999; Burnam, et al., 1988). Because these assaults occur more often in one's home or one's vehicle, a victim may develop conditioned fear responses to their homes and cars. They may also report feelings of

insecurity, loss of safety, and mistrust of others (Maletzky, 2000). In addition, victims of acquaintance rape are less likely to label their experience as a rape, seek treatment for injuries, discuss the assault with others, and report the assault to authorities (Koss, 1988). They are also more likely to experience self blame and guilt because of their prior association with the perpetrator (Gidycz & Koss, 1991; Bowie, Silverman, Kalick, & Edbril, 1990; Burnam, et al., 1988).

Alcohol is frequently cited as a risk factor for date rape. Benson (et al., 1992) reported that in a general sample of victims and perpetrators, 73% of assailants and 55% of victims were under the influence of alcohol at the time of the attack. Heavy use of alcohol is strongly associated with an increased risk for sexual assault (Muehlenhard & Linton, 1987). In a survey of college students, Koss and O'Neill found that alcohol use was one of the four strongest predictors for date rape (1988). Relatedly, Finley and Corty (1993) reported that the use of alcohol in sexual assault occurred twice as often as the use of force.

Physiological Effects of Alcohol

There is no direct relationship between alcohol's pharmacological effects and its behavioral correlates (Briddell, et al., 1978). However, alcohol clearly has an effect on social behaviors (Steele & Southwick, 1985). It also has what is commonly termed an "expectation effect" (Steele & Southwick, 1985), when consumption of even small amounts of alcohol causes dramatic changes in conditioned and operant behavior. However, it has profound physiological and psychological effects when consumed in sufficient quantities (Steele, Critchlow, & Liu, 1985; Steele & Southwick, 1985).

Commonly seen behavioral effects are extreme behavior (Pernanen, 1976), motor impairment (Abbey, et al., 2002a), alteration of motivational states (Hull & Bond, 1986), impairment of perceptual and cognitive functioning (Steele & Southwick, 1985), disruption in the interpretation of complex stimuli (Abbey, 1998), and the impairment of task performance (Steele & Southwick, 1985). Alcohol has an anxiolytic effect that can reduce inhibitions to performing behavior that typically evokes negative consequences (Seto & Barbaree, 1995). It can also act as a stimulant, which results in increased arousability (Seto & Barbaree, 1995).

Alcohol is frequently is associated with violent behavior (National Commission on the Causes and Prevention of Violence, 1970). In studies involving subjects who have been provoked under alcohol and no-alcohol conditions, sober subjects showed an increased ability to correctly identify inhibiting cues and competing contingencies for violent responses that allowed them to avoid extreme reactions (Zeichner & Pihl, 1979). However, intoxicated subjects were unable to process inhibiting cues and reacted violently (Zeichner & Pihl, 1979). In addition, alcohol impairs one's ability to react to peripheral cues (Steele & Southwick, 1985), thereby decreasing one's ability to be affected by negative and positive consequences.

Alcohol and Sexuality

Extreme behaviors related to alcohol use are not only observed in aggression, but also in sexual behavior. Because alcohol commonly causes a narrowing of the perceptual field and lowers one's ability to attend to multiple cues, only the most salient cues are typically detected (Abbey, et al., 2000; Abbey, et al., 1996; Abbey,

et al., 1996b). The most salient cues in sexually ambiguous situations are typically cues that confirm one's sexual hypotheses. Inhibitory cues tend to be ignored while under the influence of alcohol (Abbey, et al., 2000; Abbey, et al., 1996; Abbey, et al., 1996b). This is termed an "alcohol myopia" effect (Steele & Josephs, 1990).

Expectancies are rule-governed; if a man is looking for evidence that his partner is attracted to him, he typically attends to confimatory evidence and ignores inhibitory cues (Abbey, et al., 2000; Abbey, et al., 1996). For example, sober men commonly rate women as behaving more sexually than the woman actually intended (Abbey & Harnish, 1995; Abbey, et. al., 1987; Abbey, 1982; Abbey & Melby, 1986). Compounding this effect, when a woman or man is drinking, men rate women as being more sexually available than when he or she is sober (Abbey, Zawacki, & McAuslan, 2000; Abbey & Harnish, 1995; Abbey & Melby, 1986).

Relatedly, if a woman is looking for evidence that her partner will respect her wishes and not become sexually coercive, the cues to which women attend are typically confirmatory ones while conflicting evidence is ignored. Women, in particular, tend to interpret men's behaviors in the opposite direction as men rate women's behaviors (Abbey, et al., 2000); women commonly rate men as behaving less sexually than the men intend to behave (Abbey, et al., 2000). This biased interpretation of behavior between the sexes sets the stage for miscommunication, misinterpretation, and sometimes more extreme consequences of sexual assault (Abbey, et al., 2000).

The same effects are found with expectancy studies. The mere suggestion that a drink contains alcohol is likely to cause a misperception of cues involving sexuality (Abbey, et al., 2000; Abbey, et al., 1996; Abbey, et al., 1996; Abbey &

Melby, 1986). The presence of alcohol cues functions as a conditioned stimulus that elicits disinhibited behavior approximate to one's conditioning history (Hull & Bond, 1986; Marlatt & Rohsenow, 1980). According to Hull and Bond (1986), a "precondition for expectancy effects is that the individual wants to act out his sexual or aggressive drives" (p. 355). Alcohol expectancies are not believed to be a direct causal factor for sexual aggression (Abbey, 1998), but it is believed that expectancies increase alcohol consumption, which results in increased misperception of sexual cues.

Alcohol and Sexual Assault

A number of researchers found an association between alcohol and sexual assault (Seto & Barbaree, 1995; Abbey, 1991; Abbey & Harnish, 1995; Richardson & Campbell, 1982; Fritner & Rubinson, 1993; Abbey, et al., 2000; Bernat et al., 1999). Seto and Barbaree (1995) found that rapists and victims consumed alcohol in over half of reported incidents. Other researchers found that alcohol use prior to a sexually aggressive incident are as high as 80% for men and women (Koss, 1988; Nurius, 2000). In addition, a woman's level of alcohol consumption is more highly correlated with completed than attempted rapes (Abbey & Ross, 1992). However, research shows that women are likely to underestimate the role of alcohol as a personal risk factor for sexual assault (Breitenbecher, 1999).

Miller and Marshall (1987) found that over 50% of women who endorsed being a victim of sexually coercive experiences on the Sexual Experiences Survey (SES) reported using alcohol or other drugs at the time of the assault; therefore, they concluded that the use of alcohol may impair a woman in her ability to resist

unwanted sexual advances. In addition, alcohol consumption has been associated with an increased severity of sexual assault (Ullman & Knight, 1993; Testa & Livingston, 1999). Intoxicated women have reported participating in greater levels of consensual sexual activity with the perpetrator immediately prior to the sexual assault and offered less resistance than non-intoxicated women during the assault (Harrington & Leitenberg, 1994). These studies suggest that alcohol caused a slowed reaction time and a less effective response to an attack (Harrington & Leitenberg, 1994). Research shows that alcohol decreases a woman's capacity to engage in defensive and effective physical resistance, particularly if caught off-guard by a perpetrator (Nurius, 2000).

Findings of victim blame also increase following alcohol consumption before a sexual assault. Researchers discovered that a woman's use of alcohol increases subject's ratings of victim responsibility for her attack and justification for the perpetrator's violence (Norris & Cubbins, 1992; Emmers-Sommer & Allen, 1999; Wild, et al., 1998; Abbey & Harnish, 1995; Stormo, et al., 1997; Richardson & Campbell, 1982; Stormo, Lang, & Stritzke, 1997, George, Gournic, McAfee, 1988). A woman's ability to detect risky sexual cues is key to self-protection (Norris, et al., 1999). Early recognition that a social situation may become threatening can help in preventing sexual aggression (Norris, et al., 1999). Studies suggest that early and prompt verbal and physical resistance is of utmost importance in successfully escaping rape attempts (Abbey, 1991). However, many of the cues associated with risk factors for sexual assault are also associated with elements common to socialization (Norris, et al., 1999). For example, drinking alcohol is a common element to socialization; women might ignore this as a risky behavior.

In addition, dating situations contain many ambiguous cues. It may be difficult for a woman to interpret ambiguous cues as threatening because they have been previously associated with positive consequences and not associated with threatening outcomes (Norris, et al., 1999). In social situations, women tend to focus on more salient social cues rather than safety concerns (Abbey, et al., 2002a). "Over time, she may have developed strong positive associations between these factors and her interactions with men and consequently looks forward to them rather than avoids them" (Norris, et al., 1999, p. 237). In addition, a woman's learning history with regard to positive alcohol expectancies conflict with any threatening cues in the environment. The most salient and attended-to cues in this environment are positive arousal cues (Corbin, et al., 2001).

Relatedly, although cumulative risk for sexual aggression is high, the probabilistic risk of being the victim of sexual aggression on one given occasion is low (Norris, et al., 1999; Nurius, 2000). If one is not motivated to attend to threatening cues, and if alcohol impairs one's ability to react to threatening cues, one's risk is increased (Norris, et al., 1999; Nurius, 2000). Compounding this, alcohol myopia affects sexual aggression by making it "easier for some men to commit sexual assault because it allows them to focus on their immediate feelings of sexual arousal and entitlement rather than on more distal cues such as the women's discomfort or the potential for later punishment" (Abbey, et al., 2002a, p. 100).

Few studies have investigated alcohol consumption on signal detection abilities. Marx, Gross, and Juergens (1997) investigated the effect of alcohol consumption on men's abilities to perceive sexual coercion depicted on an audiotaped vignette. The investigators found significant effects for participants who

received alcohol; they took significantly longer to determine when the man on the audiotape should refrain from making aggressive sexual advances ($p<.001$). They reported that alcohol impaired one's ability to abstract, conceptualize, encode, and use situational cues, which may be an important variable in date rape (Hull & Bond, 1986; Steele & Southwick, 1985; Steele & Josephs, 1990). The authors suggested that future studies utilize this methodology to investigate how alcohol consumption interferes with a woman's risk level detection (Marx, et al., 1997).

Bernat, Calhoun, and Stolp (1998) conducted a study on sexually aggressive versus nonaggressive men's response latencies to a date rape vignette. Although alcohol consumption was not manipulated, they found that sexually aggressive men's response latencies typically were eight times longer than their nonaggressive counterparts when they were instructed that the couple depicted in the vignette were drinking alcohol. The authors suggested that future studies manipulate subject's level of alcohol consumption.

As a follow-up study, Marx, Gross, and Adams (1999) manipulated the level of alcohol consumption in aggressive and nonaggressive men. Aggressive and nonaggressive men who consumed alcohol took significantly longer than subjects who did not consume alcohol to determine when the man in the analogue should refrain from making further sexually aggressive advances. This suggests that sexually noncoercive males behave similarly to coercive males when under the influence of alcohol (Marx, et al., 1999). They suggested that research be conducted with women to determine if alcohol consumption or expectancies affects women's risk detection.

A recent unpublished dissertation investigated variables involving women's risk recognition in a date rape vignette (Lewis, 2002). Participants were assigned to one of four conditions, which involved a 2 (.08% BAC vs. no-alcohol) x 2 (expect alcohol vs. expect no-alcohol) x 2 (victimization history vs. no victimization history) design. Results showed that women's level of risk recognition did not differ between groups. In addition, the expectancy manipulation was not believable because of the high level of alcohol administered. However, women who consumed alcohol reported that they would feel more overwhelmed if they were in this scenario than their non-drinking counterparts. They also differed in their preference to use unassertive resistance versus assertive resistance. The lack of significance on the decision latency data was a surprising finding and must be replicated.

There has been a call for research that assists in identifying causal variables in sexual assault and variables interfering with accurate risk detection (Yeater & O'Donohue, 1999). Namely, Norris (et al., 1999) and Corbin (et al., 2001) suggested that future research address the critical question of whether alcohol consumption itself decreases a woman's ability to detect risk. Abbey (et al., 1996) also reported that more research is needed regarding the mechanisms of how alcohol itself increases the risk of sexual assault. However, limited research to date has been conducted on how women's consumption of alcohol impairs their ability to attend to threatening cues (See Appendix N for a comprehensive literature review).

CHAPTER II

THE PRESENT STUDY

Thus far, research in the area of sexual assault assisted in identifying the "antecedents and correlates of sexual assault" to help specify risky situations and behaviors (Abbey, et al., 1996, p.147). Previous research concluded that alcohol does play a significant role in date rape; however, many of these studies have significant weaknesses. Most studies are correlational in nature, rely on survey data, and are retrospective. There has been a call for more rigorous, controlled studies in the area of date rape as well as on alcohol's effects on date rape (Marx, et. al., 1996). There is also a paucity of studies involving the actual ingestion of alcohol and its effects on signal detection. Although laboratory manipulations involving alcohol, men, and risk detection are published, no published studies have been conducted on women's risk detection abilities under the influence of alcohol.

Correlaional research demonstrated that alcohol impairs the judgment of both the victim and the assailant, reduces men's inhibitions and increases aggression, and interferes with a woman's ability to recognize and respond to dangerous cues in sexual interactions and resist a man during a sexual assault (Frintner & Rubinson, 1993; Wilson, et al., 1999). Although alcohol is associated with as many as 80% of sexual assaults (Kanin, 1984), there is not a clear understanding of alcohol's contribution to sexual assault (Nurius, 2000; Norris, et al., 1994). Equally important is researching the ways in which alcohol can affect a woman's ability to detect a threatening situation before engaging in a behavioral response (Nurius, 2000).

Because there is a strong positive correlation between alcohol and date rape (Nurius, 1999) and there is little empirical evidence that provides a clear picture of exactly how alcohol contributes to rape (Nurius, 1999), further investigation is necessary. This study attempts to correct for past weaknesses by manipulating women's consumption of alcohol in a laboratory setting, measuring the differences in women's decision latencies and other related variables under alcohol and no-alcohol conditions, and using a vignette as a laboratory analogue for naturalistic choices. This study is an important first step in studying the effects that alcohol has upon women's risk recognition.

It is important to emphasize that although this study investigates the effect of alcohol on women's risk detection, it is not intended to support the myth that women who drink alcohol "ask for" sexual aggression (Burt, 1980). Responsibility for sexual aggression must ultimately lie with the perpetrator. However, research on common antecedents to sexual aggression can assist in developing more effective prevention strategies and empowering victims of sexual assault.

Hypotheses

Hypothesis I

It was hypothesized that the consumption of alcohol significantly decreased a woman's ability to detect increasing levels of risk in a date rape vignette as compared to the no-alcohol group.

Hypothesis II

It was hypothesized that the alcohol group had significantly decreased risk detection ratings on the following variables as compared to the no-alcohol group: Interpersonal risk, male aggression, female assertiveness, social pressure, social consequences, proposed strategy, and level of comfort.

Hypothesis III

It was hypothesized that subjects who reported having a sexual victimization history, lower levels of sexual assertiveness, less effective sexual communication, and greater endorsements of rape myths had significantly longer decision latency scores than subjects who scored in the opposite direction.

CHAPTER III

METHODS

All research procedures were in accordance with the federal recommended requirements for alcohol administration studies by the National Institute on Alcohol Abuse and Alcoholism (1989) and the Human Subjects Institutional Review Board to increase subject protection and to conform to standard guidelines.

Subjects

Forty-two females aged 21-27 (*M* = 21.9 years, *SD* = 1.38 years) were recruited from undergraduate classrooms at Western Michigan University. Eighty-five percent of the sample was White (*n* = 36), 3.4% was Hispanic (*n* = 2), 3.4% was African-American (*n* = 2), 1.7% was Asian (*n* = 1), and 1.7% was Native American (*n* = 1). Seven percent of the sample were sophomores (*n* = 3), 42.9% were juniors (*n* = 18), 47.6% were seniors (*n* = 20), and 2.4% were non-degree seeking-students (*n* = 1). Most participants were single but in a dating relationship (59.5%; *n* = 25), 26.2% were single or not dating (*n* = 11), 11.9% were engaged (*n* = 5), and 1.7% were cohabitating (n = 1).

Location

The experiment was run in the Behavioral Medicine Lab in Wood Hall at Western Michigan University. This laboratory consisted of two small rooms and one large room. The subject sat in the large room and all drinks were mixed in a small room.

Apparatus/Materials

A tape recorder was used to play the stimulus audiotape of the date rape vignette. The vignette portrayed a man and a woman engaging in conversation and sexual activity at the man's apartment after a date. The vignette contained both inhibiting and disinhibiting cues for sexual contact. The woman's refusals increased in intensity as the tape progressed. The vignette began with pleasant conversation regarding the date and progressed to kissing, fondling of the breasts, buttocks, and genitals, and culminated in nonconsensual sexual intercourse. The man used verbal persuasion, arguments, threats, and force to achieve sexual intercourse. The script, developed by Marx and Gross (1995), has been used and validated in previous studies (Marx & Gross, 1995; Bernat et al., 1999; Marx, et al., 1997; Bernat, et al., 1997; Marroquin-Loiselle, et al., 2000; See Appendix A). A stopwatch was used to measure the subject's response latencies (see Dependent Variables section).

An Intoxilyzer S-D2 Breathalyzer was used to collect data on the blood alcohol concentration of participants. This is a digital (liquid crystal) hand-held unit that employs an electrochemical fuel cell sensor to measure the concentration of alcohol vapor in expired breath (Intoxilyzer S-D2 Operator's Manual, 1998). Readings obtained should not vary more than ±5% from blood drawn at that time (Intoxilyzer S-D2 Operator's Manual, 1998). S-D2 plastic mouthpieces were used to take Blood Alcohol Concentration (BAC) readings and were discarded after each use.

A ClearPlan Easy over-the-counter pregnancy test was used to determine the pregnancy status of the subjects. The ClearBlue Easy pregnancy test is reported to be over 99% accurate and will detect a pregnancy on the first day of one's missed

menstrual period (Jacobs, J., personal communication, July 16, 2001; Unipath LTD, 2000). All subjects were scheduled for appointments during days 1-14 of their menses (the proliferative phase) in order to reduce the risk of a false negative pregnancy test result.

Eighty-proof Absolut vodka, tonic water, flattened tonic water, lime juice, and ice were used to mix drinks for subjects. A scale was used to measure subject's body weight to determine the drink volume.

Measures

The following measures were used to test Hypothesis III.

Personal Data Survey

The Personal Data Survey (PDS; Naugle, 1999) is a self-report inventory that assesses demographic information such as age, sexual practices, attitudes about sex, relationship status, and mental health history. It gathered information about subject's sexual assault history by including questions from the following validated instruments:

Sexual Experiences Survey

The Sexual Experiences Survey (SES) (Koss & Oros, 1992) is a self-report inventory that contains ten "yes" or "no" questions regarding past sexual assault experiences. This measure has been extensively used in sexual assault research and was normed on 3,862 college students (Koss & Gidycz, 1985).

Wyatt Sexual History Questionnaire

The Wyatt Sexual History Questionnaire (WSHQ) is a self-report questionnaire that assesses aspects of sexual abuse and violence, including the age of abuse, the role of perpetrator, and the amount of force used (Wyatt, 1988).

National Women's Study Victimization Screening

The National Women's Study Victimization Screening (NWSVS) (Resnick, Kilpatrick, Dansky, Best, & Saunders, 1993) was developed to determine risk factors for sexual assault, physical assault, and PTSD in a national sample consisting of 3,006 women (Acierno, et al., 1999).

Sexual Assertiveness Scale

The Sexual Assertiveness Scale (SAS) consists of items assessing assertiveness regarding sexual initiation, sexual refusal, and prevention of pregnancy and sexually transmitted diseases (Morokoff, et al., 1997). It is a general measure of one's level of sexual assertiveness.

Rape Myth Acceptance Scale

The Rape Myth Acceptance Scale (RMAS) is a 19-item self-report scale that assesses a subject's adherence on a 7-point Likert scale to prejudiced, stereotyped, or false beliefs about rape, rape victims, and rapists (Burt, 1980).

Sexual Communication Survey

The Sexual Communication Survey (SCS) is a 7-point Likert self-report scale that assesses a subject's self-evaluation of her ability to effectively state sexual needs and wants with her partners.

Dependent Variables

Response Latency

To simulate behavioral choices in a naturalistic setting, a response latency measure was used. Response latency was defined as "the length of time needed by participants to determine when the male depicted in the vignette should refrain from making sexual advances toward his female partner" (Marx, et. al., 1998, p. 9). Response latencies were recorded in seconds with a stopwatch, with the timing commencing at the start of the vignette and ending when the participant pressed the "stop" button on the tape player. The participant was instructed to press the "stop" button on the tape player if or when the man in the vignette should refrain from making additional sexual advances toward the woman (see directions in the "General Procedure" section). In order to minimize curiosity, subjects were instructed that the tape continued to play until its completion. Previous studies (Bernat, et. al., 1997; Marroquin-Loiselle, et al., 2000) provided face, convergent, and divergent validity data and test-retest reliability data regarding the use of this measure in date rape research.

Intoxication Level Assessment

The Intoxication Level Assessment (ILA) was developed by the researcher to rate the level of perceived intoxication on a scale of 1-10, at which 1 was "not intoxicated at all", and 10 was "as intoxicated as I have ever been". These scores were compared with the assigned experimental condition in order to determine if subjective intoxication levels corresponded with actual levels of intoxication as measured by the breathalyzer. Subjects were also asked if their drink contained alcohol, and if so, how many standard drinks they consumed. This measure was administered after peak BAC levels were achieved and upon completion of the study (See Appendix J).

Vignette Rating Questionnaire

The Vignette Rating Questionnaire (VRQ) was designed by the researcher to assess a subject's reaction to the vignette at eight critical points regarding the level of interpersonal risk, level of female assertiveness, level of male aggression, and level of social pressure on a Likert scale of 1-8. Qualitative data was also gathered regarding the social consequences of each actor, level of action proposed, and danger cues in the segment (See Appendix K).

Independent Variable

Alcohol

The experimental group received 1.25 mL of 80 proof Absolut vodka per kilogram of body weight. The vodka was blended with tonic water in a 1:5 ratio mixture and included ice and lime juice; previous studies indicated that when using

this ratio, subjects could not detect the presence or absence of vodka at better than a chance rate (Marlatt, Demming, & Reid, 1973; Marlatt & Rohsenow, 1980). This amount of alcohol produced a peak BAC of approximately .04%. This BAC was chosen because previous studies have reported that this level of intoxication was enough to affect perceptions and disinhibition (Marx, et al., 1997; Abbey, et. al., 2000). Subjects in the control group were given a 1:5 ratio of tonic water to flattened tonic water. To disguise drink content in the control group, vodka was swabbed around the rim of the glass and drops of lime juice and vodka were placed on the tonic water. Subjects were asked to not eat for four hours before attending the session in order to enhance absorption.

The contents of each mixture were poured into three glasses of equal volume; subjects were given 15 minutes (five minutes per drink) to consume all three drinks. A timer was placed in front of each subject in order to pace themselves per their preference. All subjects were able to consume each drink within this time frame, although two subjects needed prompting in order to finish each drink in the five-minute time limit. These standards were used in previous studies (Marx et al., 1998; Abbey et al., 2000). No negative reactions to alcohol occurred.

General Procedure

Subjects were orally recruited by the researcher and from posted recruitment scripts on Western Michigan University's campus. All subjects were given extra credit by participating course instructors for their participation and agreed to bring a designated driver to the session in order to facilitate a ride home. All subjects were screened on the phone before their appointment and once they came for their

session. The screening consisted of investigating medical and psychological conditions that may preclude drinking alcohol: (1) the subject had previous experience drinking alcohol as defined by drinking at least one drink in the past month and at least three drinks in one sitting in the past six months, (2) the subject was not pregnant, (3) the subject agreed to not drive or operate machinery for 12 hours after participation if they consumed alcohol, and (4) the subject was over 21 years old.

All subjects that passed the phone screening were invited to participate in the project. Once the subject gave consent to the experimental procedures, the researcher verified the subject's age (over 21) via two forms of identification, one being a driver's license.

All subjects were informed that the study investigated the effect of alcohol on interpersonal dating situations, specifically risk perception of sexual coercion. After the screening, each subject was asked to self-administer an over-the-counter pregnancy test (ClearPlan Easy) and to bring the results to the researcher. The subject self-administered the urine test; no positive results (e.g., pregnancy) were achieved. Only one subject was unable to participate in the project upon her visit to the session because she could not complete the pregnancy test because she could not urinate onto the test strip.

Next, the Intoxilyer S-D2 Breathalyzer confirmed that the subject's baseline blood alcohol level was .00%. No subjects were above this baseline level. Each subject was weighed to determine the exact amount of alcohol or flattened tonic water to be administered (1.25 ml of 80 proof vodka or flattened tonic water per kg of body weight). She was then given three drinks containing alcohol or no-alcohol

as described in the "Independent Variable" section. The subject was asked to sit and read neutral materials during absorption.

The Intoxilyzer S-D2 Breathalyzer measured BAC's at ten minutes and 17.5 minutes after alcohol ingestion. Although peak BAC's should occur at 17.5 minutes, two additional readings were allowed at 22.5 minutes and 27.5 minutes to allow for idiosyncratic differences between subjects. All subjects were able to achieve this level in the alcohol group within this time frame. Subjective intoxication levels (ILA) were taken after a BAC of .04 +/- .01% was achieved in the alcohol group or after 17.5 minutes in the no-alcohol group.

Each subject was asked to listen to the date rape vignette. She was instructed as follows:

> Your task is to listen to the tape and immediately signal, by pressing this button, when the man should refrain from making further sexual advances. Even if you decide to press the button, you will be able to listen to the tape in its entirety from start to finish. If you become distressed or if I notice that you are becoming distressed, either you or I can stop the tape. Do you have any questions?

Response latencies and pre-VRQ readings were obtained. After the subject indicated that the tape should stop, the tape was continued until its completion to minimize curiosity. No subjects became noticeably distressed with the content of the tape or requested that the tape should stop.

The subject listened to the same vignette a second time. The vignette was stopped at eight critical intervals, at which time the subject was asked to complete the VRQ. Each subject was asked to complete the Personal Data Survey (PDS), the Rape Myth Acceptance Scale (RMAS), Sexual Assertiveness Survey (SAS), and the Sexual Communication Survey (SCS).

After completion, all subjects were given a nonalcoholic beverage and a light snack. If alcohol was consumed during the course of the study, subjects were retained for 30 minutes after the last experimental task. A final Breathalyzer reading was taken, the researcher read the debriefing script, gave the subject a referral sheet, and her designated driver escorted her home.

CHAPTER IV

RESULTS

Alcohol Use and Sexual History

Subjects reported an average alcohol use of 5.85 standard drinks per week (*SD* = 5.15), 3.17 standard drinks per sitting (*SD* = 2.10), and 1.80 standard drinks per date (*SD* = .959). Their reported sexual history included having sexual intercourse with 1.08 men in the past month (*SD* = .76), 1.73 men in the past six months (*SD* = 1.45), and 6.35 men in the last five years (*SD* = 4.41). Eighty-one percent of subjects had sexual intercourse in the last four months, and 2.4% of the sample have not had sexual intercourse. Groups did not significantly differ in regard to age (*t*=.222; *p*=.826), relationship status (*t*=1.35; *p*=.184), race (*t*=-.479; *p*=.635), class standing (*t*=.413; *p*=.682), drinks per week (*t*=-.805; *p*=.426), and number of sexual partners (*t*=.188; *p*=.852).

Sexual Victimization History

Approximately one quarter (26.2%) of the sample reported a history of child sexual abuse. Sixty-two percent reported being the victim of unwanted sexual pressure and 31% reported being a victim of attempted sexual assault. Of this number, 70.4% reported that the perpetrator was their boyfriend, ex-boyfriend, or a date, 22.2% a friend or an acquaintance, 14.8% a co-worker, 3.7% their father or step-father, 3.7% another relative, 3.7% a stranger, and 3.7% a non-relative (totals in excess of 100% were accounted for by subjects endorsing multiple categories). In 25.9% of cases, the perpetrator used physical force. Fifty-six percent of the time,

perpetrators were under the influence of alcohol, 7.4% under both alcohol and drugs, and 29.6% were not under the influence of any substance. The majority of attempted assaults occurred two to three times (46.2%); the remainder of assaults happened once (15.4%), once a year (3.8%), several times per year (26.9%), once a month (3.8%), or daily (3.8%). The victim was afraid of serious injury or death in 11.1% of the cases and felt their life was threatened in 3.7% of the reports.

Thirty-one percent of the sample reported being a victim of sexual assault as an adult. The average number of assaults was 1.7 (*SD* = 1.46) at an average age of 17.29 (*SD* = 1.11). Twenty-eight percent of the endorsements involved a series of attacks. Most subjects reported being a victim of rape by a boyfriend, ex-boyfriend, or a date (57.1%) and a friend or an acquaintance (42.9%). Other perpetrators included strangers (14.3%) and co-workers (28.6%). In fifty-seven percent of the cases, the perpetrator was under the influence of alcohol, 14.3% both alcohol and drugs, and 28.6% were not under the influence of any substance. Similarly, in 57.1% of the cases, the victim was under the influence of drugs, 14.3% both alcohol and drugs, and 28.6% neither alcohol nor drugs. Fifty-seven percent of the assaults involved the perpetrator using physical force and 14.3% of the sample was afraid of serious injury or death and felt their life was threatened.

Intoxication Level Assessment

Within ten minutes, subjects in the experimental group achieved an average BAC of .0395%. Peak levels occurred for most subjects at 17.5 minutes, with an average BAC of .041%. Only two subjects were unable to achieve the .04% BAC ± .01% standard at 17.5 minutes and were measured later at 22.5 minutes (*M* BAC =

.0275%). One subject needed the entire 27.5 minutes to achieve the standard (BAC = .031%).

In order to determine if both groups were able to detect their group assignments, an Intoxication Level Assessment was used. This measure assessed whether the subject believed that they had consumed alcohol as well as the perceived amount of alcohol they consumed. On average, the control group reported on a scale of 1-10 (one being the least intoxicated, 10 being the most) a score of 1.38 (*SD* = .80) with a perceived number of standard drinks of 1.50 (*SD* = .7638). The experimental group reported a score on average of 3.70 (*SD* = 1.75) with a perceived number of standard drinks of 2.6905 (*SD* = .8212). This difference is statistically significant (*F* values 11.788 and 12.361, respectively; *p* = .002) for both the question of their perceived level of intoxication and the perceived number of standard drinks (see Figure 1). A Post-ILA test was also statistically significant (*F* = 4.831; *p* = .037), indicating that upon completion of the experimental tasks, the groups reported significantly different intoxication levels on a scale of 1-10 (experimental group average = 3.70, control group average = 1.38; see Appendix B).

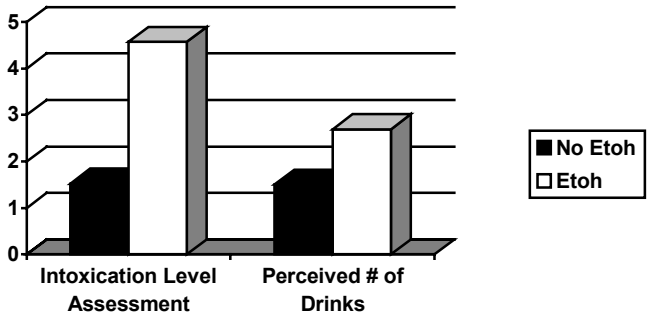

Figure 1. Manipulation Check

Alcohol's Effect on Decision Latency

To test the hypothesis that subjects in the alcohol group had significantly longer decision latencies than subjects in the no-alcohol group, a two-group design was used as follows:

1) No-Alcohol Group: Each subject in this group consumed a placebo drink to the standards listed in the "Independent Variables" section.
2) Alcohol Group: Each subject in this group consumed a drink containing alcohol to the standards listed in the "Independent Variables" section.

Using a basic t-test, decision latencies between groups were analyzed to determine if any difference existed because of the manipulation. A significant difference was found between groups on the response latency variable (t = -4.639; p < .000). Response latencies for the control group averaged 92.19 seconds and during Segment #3 (SD = 14.56). In Segment #3, the female actor told the male actor that she was not comfortable with him touching her breasts and the male actor apologized. The experimental group's decision latency averaged 134.38 seconds and during Segment #5 (SD = 39.05). In Segment #5, the male actor touched the female's breast once and buttocks twice without her permission, the female actors became angry, and the male actor raised his voice and gave excuses to her rebuttals. As predicted, the experimental group's decision latency was significantly longer than the control group's decision latency. Alcohol appeared to negatively affect the experimental group's ability to detect risk in this setting (See Appendix D and Figure 2). These values are comparable to alcohol administration studies on men and women (Marx, et al, 1999; Wilson, et al, 1999; Marx et al, 1997).

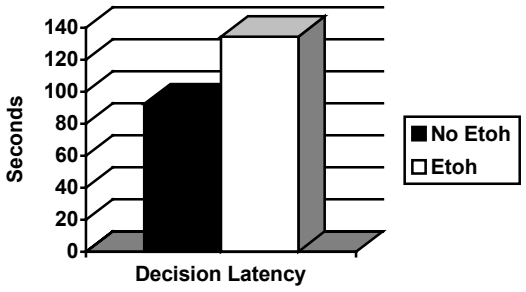

Figure 2. Decision Latency Data

Alcohol's Effect on Vignette Ratings, Quantitative Data

In order to analyze the quantitative data from the VRQ, a split plot ANOVA tested the hypothesis that the control group rated the eight segments significantly different than the experimental group. A two-factor design was used, where the repeated factor was the multiple segments (Segments 1-8) of the date rape vignette and the between-subjects factor was the group assignment. Quantitative segments of the VRQ corresponded to the following questions: How much interpersonal risk was involved in this segment?, How assertive was the female in the segment?, How much social pressure was involved in this segment?, and How aggressive was the male in the segment?. Questions were rated on a Likert scale of 1-8, where 1 was the lowest rating and 8 was the highest rating. Because there were eight segments, each question was rated eight times throughout the audiotape.

Ratings on Interpersonal Risk

Regarding the question, "How much interpersonal risk was involved in this segment?", within-subject ratings showed significant differences between control

and experimental group means ($F(7,34)$ = 114.942; p < .000). A test of linearity revealed that both groups rated the level of interpersonal risk higher as the tape progressed ($F(1, 40)$ = 523.042; p<.000). The control and experimental group's ratings did not show any evidence of divergence ($F(1,40)$ = .711; p = .404).

Between group effects were significant only on Segment #3 (t = 3.00; p = .005). On Segment #3, the male touched the female's breast after she stated, "no". The control group (M = 5.86; SD = 1.11) rated this segment as having signficantly more interpersonal risk than did the experimental group (M = 4.38; SD = 1.96). All other segments showed a trend for the control group rating the scenario as higher risk than the experimental group, though not significantly so (see Figure 3).

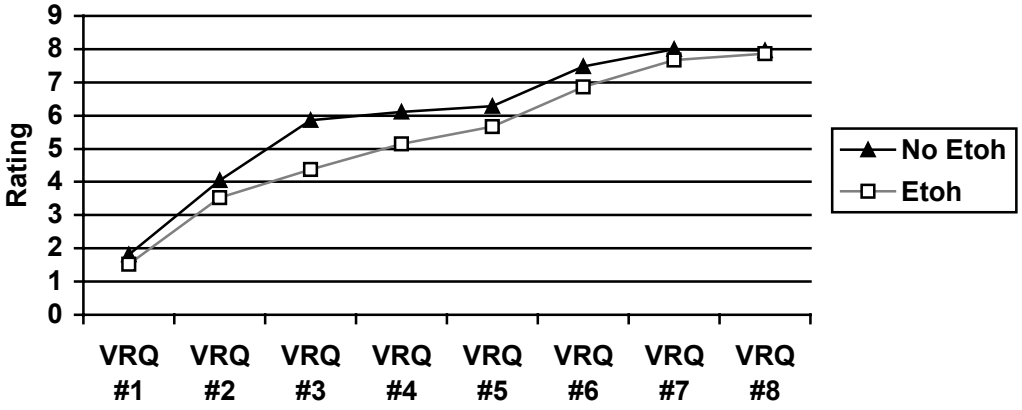

Figure 3. VRQ Ratings on Interpersonal Risk

Ratings on Female Assertiveness

Regarding the question, "How assertive was the female in this segment?", within-subject ratings showed significant differences between control and experimental group means ($F(7,34)$ = 23.964; p < .000). A test of linearity revealed that both groups rated the female's level of assertiveness higher as the tape

progressed (*F (1,40)* =90.214; $p < .000$). The control and experimental group's ratings did not show any evidence of divergence (*F (1,40)* = .002; $p = .969$). There were no significant between group effects on any segment with regard to female assertiveness ratings (see Figure 4).

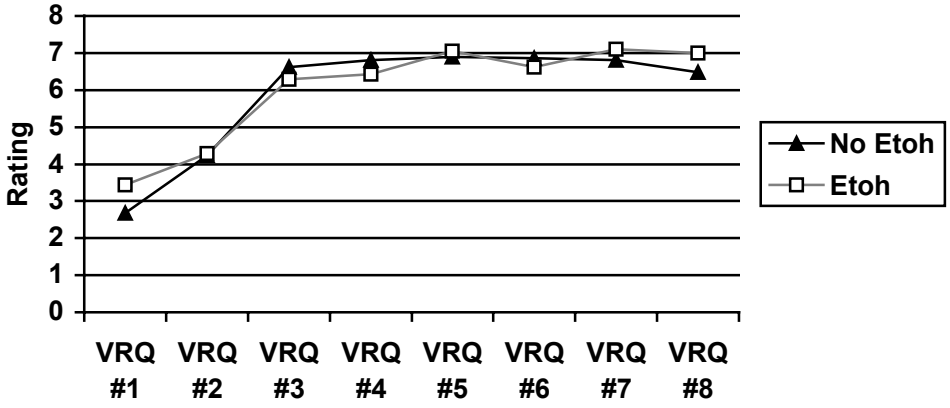

Figure 4. VRQ Ratings on Female Assertiveness

Ratings on Social Pressure

Regarding the question, "How much social pressure was involved in this segment?", within-subject ratings showed significant differences between control and experimental group means (*F (7,34)* = 28.99; $p < .000$). A test of linearity revealed that both groups rated the level of social pressure higher as the tape progressed (*F (1,40)* = 87.358; $p < .000$). The control and experimental group's ratings showed a trend toward divergence, especially after Segment #3 (*F (1,40)* = 3.509; $p = .068$).

Between group effects were significant only on Segment #4 ($t = 3.564$; $p = .006$). On Segment #4, the male touched the female's buttocks after she stated "no" two times regarding whether he could progress past kissing. The control group rated

this segment as having signficantly more social pressure than did the experimental group. Segments #3 and #5-#8 showed a trend for higher social pressure ratings for the control group, though not significantly so (see Figure 5).

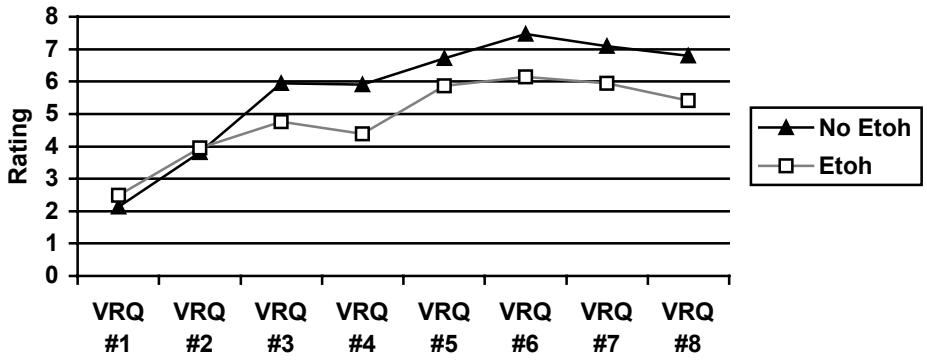

Figure 5. VRQ Ratings on Social Pressure

Ratings on Male Aggressiveness

Regarding the question, "How aggressive was the male in this segment?", within-subject ratings showed significant differences between control and experimental group means ($F(7,34) = 146.069$; $p < .000$). A test of linearity revealed that both groups rated the male's level of aggressiveness higher as the tape progressed ($F(1,40) = 593.736$; $p < .000$). The control and experimental group's ratings did not reveal any significant divergence ($F(1,40) = 2.592$; $p = .115$), although a divergence can be visually identified in Segments #2-#4. There were no significant between group effects on any segment with regard to ratings on male aggressiveness, although Segments #2-4 showed a trend for higher ratings of aggressiveness in the control group (see Figure 6).

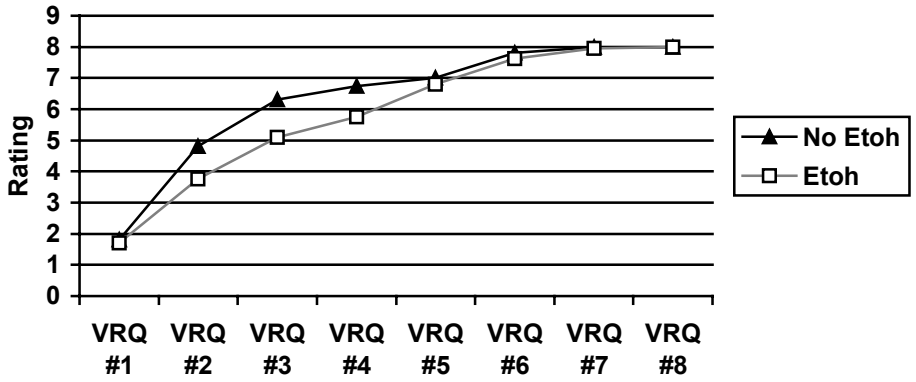

Figure 6. VRQ Ratings on Male Aggressiveness

Alcohol's Effects on Vignette Ratings, Qualitative Data

In order the test the hypothesis that alcohol significantly impaired the experimental group's ratings on each segment, a multinomial logistic regression analysis was conducted. This method tested the probability of belonging to a certain category conditional upon group membership and the specific audiotaped segment. The null hypothesis was that there were no associations between group membership and the probability of responding in a certain category. All qualitative responses were categorized based upon similarities in responses, and there was 100% interrater reliability between the experimenter's ratings and a research assistant's ratings.

Ratings on Social Consequences for the Male

Regarding the question, "What are the social consequences for the male acting in the way he did in this segment?" responses were categorized into one of the following three categories: Positive social consequences (e.g., "she will like him"), no social consequences (e.g., "nothing"), and negative social consequences (e.g. "people will think he's a jerk"). Significant differences were only found on Segment

#5 [χ^2 (2, *N*=42) = 7.609; *p* = .022; See Appendix F]. During Segment #5, the male touched the female's breasts once and buttocks twice after she stated, "no". In this segment, the male became verbally aggressive and attempted to pressure the female by offering many rebuttals in response to her denials.

Table 1

Segment #5 VRQ Ratings for Male's Social Consequences

Group	Positive Social Consequences	No Social Consequences	Negative Social Consequences
Control	0	0	21
Experimental	2	3	16

These results demonstrated that the control group realistically evaluated negative consequences in this segment, which was an accurate assessment. The experimental group was more likely to neutrally evaluate the male's actions or to attribute positive intentions to them. This segment was also a critical segment, because the male became more verbally aggressive but not yet physically aggressive (See Table 1).

Ratings on Social Consequences for the Female

Regarding the question, "What are the social consequences for the female acting in the way she did in this segment?" responses were categorized into one of the following three categories: Positive social consequences (e.g., "he will like her"), no social consequences (e.g., "nothing"), and negative social consequences (e.g. "people will think she's a tease"). Significant differences were only found on Segment #2 [χ^2 (2, *N*=42) = 9.74; *p* = .008; See Appendix E]. During Segment #2,

the female and male engaged in reciprocal communication in the man's apartment after their date. The control group was more likely to rate this interaction as having negative consequences for the female. Their answers suggested that they were more in tune to the risk inherent in being alone in a man's apartment. The experimental group rated this segment more neutrally (See Table 2).

Table 2

Segment #2 VRQ Ratings for Female's Social Consequences

Group	Positive Social Consequences	No Social Consequences	Negative Social Consequences
Control	3	7	11
Experimental	5	14	2

Ratings on Strategy

Regarding the question, "Pretend that you are the woman in this scene. What would you do or say right now?", responses were categorized according to the strategy used: Nothing/passive answer (e.g., "I'd keep kissing him"), explict verbal strategy (e.g., "I only want to talk"), explicit physical strategy (e.g., "I'd leave the apartment"), and combination of verbal and physical strategies (e.g., "I'd push him and tell him to get off of me"). Significant differences were only found on Segment #2 [χ^2 (3, N=42) = 5.97; p = .051] and Segment #4 [χ^2 (3, N=42) = 15.12; p = .002; See Appendix G].

During Segment #2, the female and male engaged in reciprocal communication in the man's apartment after their date. The control group recognized the risk of being in a man's apartment alone significantly more than the

experimental group. Three subjects in the control group indicated that they would redirect the conversation (e.g., "let's do something else") and one indicated that they would leave (See Table 3).

Table 3

Segment #2 VRQ Ratings on Strategy

Group	Nothing/ Passive Answer	Explicit Verbal Strategy	Explicit Physical Strategy	Combination of Verbal and Physical Strategy
Control	17	3	1	0
Experimental	21	0	0	0

On Segment #4, the male touched the female's breasts once and buttocks twice after she stated, "no". All members of the control group agreed to use a specific strategy, especially a combination of verbal and physical resistance. The experimental group members had no combination strategies but more passive answers. Because asserting one's needs and wishes is important in setting limits, the experimental group can be seen as acting in a way that puts them more at risk because either they did recognize the inherent risk or did not pursue this option (See Table 4).

Table 4

Segment #4 VRQ Ratings on Strategy

Group	Nothing/ Passive Answer	Explicit Verbal Strategy	Explicit Physical Strategy	Combination of Verbal and Physical Strategy
Control	0	12	4	5
Experimental	5	9	7	0

Ratings on Comfort Level

Regarding the question, "Pretend that you are the woman in this scene. List anything that happened in this scene that would make you feel uncomfortable," responses were categorized according to the type of identification made: Nothing, indiscriminate identification of danger (e.g., "I don't know, but something makes me uncomfortable"), dangerous physical surroundings (e.g., "I'm alone in his apartment"), male's verbal aggressiveness (e.g., "he keeps trying to talk me into it"), male's physical aggressiveness (e.g., "He keeps touching me after I said no"), and a combination of answers (e.g., "He keeps touching me and giving me excuses").

There were significant between group differences on Segment #5 [χ^2 (4, N=42) = 12.06; p = .017] and Segment #6 [χ^2 (4, N=42) = 14.25; p = .007; See Appendix H]. During Segment #5, the male became verbally aggressive and attempted to pressure the female by offering many excuses for why they should engage in sexual intercourse. The control group was more accurately able to label this instance as verbal aggression, while the experimental group gave more indiscriminate identifications of danger. At this point, the verbal aggression was

rather obvious, as the male raised his voice and offered the female reasons why she should proceed with sexual relations after her repeated "no's" (See Table 5).

Table 5

Segment #5 VRQ Ratings on Comfort

Group	N/A	Indiscriminate Identification Of Danger	Male's Verbal Aggression	Male's Physical Aggression	Combination of Answers
Control	0	5	13	1	2
Experimental	4	9	4	2	2

During Segment #6, the male threatened, pushed, and yelled at the female for rebuffing his advances. The control group had more "combination" answers of both physical and verbal aggression. Although the experimental group recognized the risk, they did not have any "combination" answers and instead endorsed physical aggression, verbal aggression, and indiscriminate identifications separately (See Table 6). This separate identification may carry less weight than a combined identification and may lower one's motivation to remove oneself from a potentially dangerous situation.

Table 6

Segment #6 VRQ Ratings on Comfort

Group	N/A	Indiscriminate Identification Of Danger	Male's Verbal Aggression	Male's Physical Aggression	Combination of Answers
Control	0	7	7	1	6
Experimental	1	5	9	6	0

Correlations Between Alcohol and Self-Report Variables

In order to determine if data from the self-report variables correlated with decision latency, a Pearson Product-Moment Correlation was conducted. A Bonferroni correction was applied to the number of comparisons, with a resulting *p* critical value of .0033. Of the RMAS, SCS, SAS, adult victim of sexual assualt, and child victim of sexual abuse variables, only one correlated significantly with decision latency. The total RMAS and decision latency *r* was .510 ($p = .001$). This indicated that one's total self-reported level of rape myth acceptance as measured by the RMAS positively correlated with higher decision latency scores. Upon further analysis, it was also found that the total SAS and SCS correlated significantly as well ($r = .455$; $p = .003$). This indicated that as one's self-reported level of sexual assertiveness increased, their self-reported level of sexual communication also increased. Interestingly, no significant correlations were found with regard to female victims of childhood sexual abuse or adult sexual assault with decision latency (See Appendix C).

CHAPTER V

DISCUSSION

This study was the first to determine that there is a positive relationship between women's alcohol consumption and her related decrease in risk recognition in a date rape vignette. It was also demonstrated that alcohol consumption influenced ratings of social pressure, social consequences, decision-making ability, and level of comfort in a date rape vignette. However, there were no significant between group differences on ratings of female assertiveness or male aggressiveness even though both groups performed differently on the decision latency task.

Consistent with the main hypothesis, there were significant between group differences on decision latency scores on the date rape vignette. This result is consistent with findings regarding male subject's increases in decision latency scores as a result of an alcohol manipulation (Marx, Gross, & Juergens, 1997; Marx, Gross, & Adams, 1999). Because significant results with men were discovered when investigating aggressive versus nonaggressive men on decision latency scores with an alcohol manipulation (Marx, Gross, & Adams, 1999), it would be interesting for future studies to determine if any differences exist between assertive versus passive women.

Lewis (2002) found that intoxicated women's decision latency data was not siginficantly different than their sober counterparts. Her study involved a greater amount of alcohol (.08% BAC) and different task instructions; she instructed participants that the couple went on five dates before the vignette. The belief that the couple was in a dating relationship could have influenced subject's decision

latencies. Research shows that sexual aggression in an intimate relationship is more condoned than violence in a non-established relationship (Bohmer, 1991). Because of the large differences in response latency data between these studies, this study should be replicated in order to definitely state that alcohol affects women's decision latency.

Ratings on female assertiveness and male aggression did not show any significant differences between groups on any segment, although ratings on male aggression were higher for the control group on Segments two through four. It is questionable why these differences were not significant. On average, most subjects in the control group had decision latency scores during Segment #3 while those in the experimental group exhibited decision latency scores during Segment #5. Because ratings on male aggressiveness were similar, it is likely that the experimental group recognized increasing levels of male aggression and female assertiveness but chose not to terminate the interaction. Although danger cues were recognized, their attention may have been distracted to only the more salient cues in the vignette, which may have been the female actor's willingness to forgive the male actor. Alcohol myopia (Steele & Josephs, 1990) may account for this trend.

There were significant findings with regard to interpersonal risk on the VRQ on Segment #3 and social pressure on Segment #4. During these segments, the male actor pushed the boundaries with the female actor by touching her breasts and buttocks after she stated a preference to avoid physical contact. Most members of the control group volunteered that the male actor was "being pushy" and "acting like a jerk" in their open-ended responses. However, the experimental group usually indicated that they would continue with the interaction because the male apologized.

This may be another example of the alcohol myopia effect (Steele & Josephs, 1990), where danger cues are not attended to and preference is given to cues that are the most salient. It is likely that subjects in the experimental group wanted to believe that the male actor would respect their wishes and cease his advances. This boundary violation is especially dangerous in dating situations, and it seemed that alcohol compromised this recognition. This may have negated the experimental group's ability and motivation to take action to terminate the interaction. The experimental group may have also attended to the female actor's short-term success in stopping the male actor's advances, which may have resulted in the "faulty discrimination that she will be able to stop him in the future" (Gross, Weed, & Lawson, 1998, p. 342).

During open-ended questions, only the control group recognized the risk inherent in being alone in a man's apartment and attributed negative social consequences this early in the vignette. They also attributed negative social consequences to the male in Segment #5, where the male was becoming increasingly persistant and offered the female many excuses in response to her denials. This segment was a critical segment; in this segment it became rather obvious that the interaction was increasing in intensity and in danger. Some members of the experimental group rated this segment as having positive or no social consequences. It can be argued that the control group was able to accurately identify this interaction as dangerous while the experimental group did not attend to this danger. The effect of alcohol appeared to restrict the experimental group's attention to dangerous cues.

With regard to what each subject would do or say in each segment, the control group had significant differences in Segments two and four. More control

group subjects indicated that they would like to leave the male's apartment in Segment #2 because they felt uncomfortable being alone in a risky environment. In addition, after the male actor touched the female's breasts and buttocks without her permission, all control group members agreed upon using a verbal or physical strategy to remove themselves from the situation. It is interesting to note that terminating the interaction at these points was preferred because the situation had not yet escalated beyond the female actor's control. The effect of alcohol appeared to delay the experimental group's risk recognition. This delay may result in deciding "too late" that a situation is becoming dangerous.

The last vignette rating was regarding comfort level. When subjects were asked if anything made them feel uncomfortable in the situation, significant differences were found on Segments five and six. During Segment #5, the male offered the female many excuses for her disinterest in sexual relations and became more frustrated and persistent. Control group members were more likely to recognize the danger in his increasing levels of verbal aggression, while the experimental group failed to identify verbal aggression as a possible index of danger. The indiscriminate nature of their answers (e.g., "I don't know what it is, but something makes me uncomfortable") indicated that although they recognized that there was some discomfort in the interaction, they did not identify it as readily as the control group. This is worrisome because early, specific identification is key to self-protection (Norris, et al., 1999). During Segment #6, the male became increasingly frustrated with the female's rebuffs, yelled at her, and pushed her away. This is the first segment where physical violence occurs. Members of the control group were more likely to identify both the male's verbal and physical aggression, while

members of the experimental group were more likely to identify either the verbal or physical aggression separately. It can be argued that this separate identification carries less weight than a combination of both answers, since the threshold for action may depend on the presence of multiple variables and danger cues.

There were significant positive correlations between total RMAS scores and decision latency, and total SCS scores and SAS scores. The positive RMAS and decision latency correlation was consistent with the proposed hypothesis (Hypothesis III). The significant correlation between total SCS and SAS scores was not surprising given the similar content measured in both scales. However, it is surprising, and contrary to the third proposed hypothesis, that these two measures did not correlate with decision latency since high levels of assertiveness and communication were proposed to be related to earlier decision latency scores. This suggests that self-reported levels of sexual assertivess and sexual communication did not strongly influence one's decision-making ability with regard to sexually aggressive situations. It is likely that these women are more likely to assert their needs and wishes in interpersonal relationships, but it remains to be seen if they are able to assert their wishes and needs in newly-formed relationships, in dangerous situations, or if they are likely to act in a way consistent with their wishes.

Regarding the correlation between RMAS and decision latency scores, it is expected that the more one accepts traditional rape myths that the less they are able to discriminate risk or possibly act to remove oneself from a dangerous situation as measured by this vignette. However, it is surprising that there were no significant correlation between one's sexual abuse or assault history and decision latency. It is likely that individuals that have been the victim of sexual abuse or sexual assault are

more vigilant to the risk of interpersonal danger, while others who have not been victimized are not. Future research can help distinguish this boundary.

Consistent with past and current research, the amount of sexual abuse and assault reported continues to be high. Sixty-two percent of women endorsed experiencing unwanted sexual pressure, 31% attempted sexual assault, and 31% actual sexual assault. In addition, it was reported that of these attacks, 71% of the perpetrators were under the influence of alcohol and/or alcohol. Given these high prevalence rates, research into prevention of sexual assualt and alcohol's influence on these attacks is still strongly needed.

Results from the VRQ were a positive first step in assessing female's attributions and intentions with regard to this vignette. However, many quantitative questions showed a ceiling effect due to the bounded nature of the rating scale used (1-8). As the level of aggression increased on the vignette, the ratings became closer to the ceiling (8). Although this was unavoidable with this measure, future research should attempt to find a measure with limited ceiling effects to help determine true ratings. In addition, the segments on the vignette were arbitrarily determined based upon the subsequent escalation of the interaction. Future research can empirically determine the optimal scaling for the segments in order to ascertain the best segments for future research.

Another limitation of this study involved the laboratory nature of this experiment. Although laboratory experiments have high internal validity, there are obvious concerns about generalizability (Abbey, et al., 2002). Due to ethical constraints, researchers must rely on indirect approaches to studying sexually assualtive behavior (Abbey, et al., 2002). Real-life situations are likely to involve

many different variables that operate simultaneously. Laboratory experiments such as this study investigate variables that are isolated from outside contingencies. In addition, in natural settings people often reach much higher levels of intoxication than the level used in this study. Alcohol is not a dichotomous variable; many different gradients of consumption can influence behavior (Abbey, et al., 2002).

Although only the experimental group received alcohol, the control group believed that they did in the majority of cases. In both the control and experimental group, most subjects reported being unable to distinguish whether their drinks contained alcohol. On average, the control group reported receiving one and a half standard drinks, while the experimental group endorsed receiving 2.69 standard drinks. Further studies should determine what, if any, placebo effect was present and control for this by using an alcohol/no-alcohol x expect alcohol/expect no-alcohol design, similar to the design used by Abbey, Zawacki, and McAuslan (2000).

This study demonstrated that females who have consumed a moderate amount of alcohol are more impaired in their decision-making ability, detection of risk, identification of social pressure, identification of social consequences, proposed action taken, and comfort level at certain segments of a date rape vignette. However, there were no differences in ratings on male aggression or female assertiveness. Future studies should use this methodology to vary the amount of alcohol ingested, manipulate expectaction, and determine differences in subject's level of assertiveness versus passivity and victimization history with an alcohol manipulation on a decision latency task. The use of subjects under age 21 would be interesting given that the prevalence of date rape is the highest in the 16-19 age

group (Fritner & Rubison, 1994), and these individuals are arugably more naïve to alcohol's effects. In addition, prevention research should focus on sensitizing men and women to the effects of alcohol on risk detection in order to reduce one's optimization bias and the prevalence of rape.

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Appendix A

TABLE 7: CORRENSPONDENCE BETWEEN DECISION LATENCY AND COERCIVE SEXUAL BEHAVIOR ON THE AUDIOTAPE VIGNETTE

Segment	Time	Tape (Dialogue)
Enter Apartment	0-13 seconds	Couple enter man's apartment (M) "Please excuse the mess" (W) "Don't worry about it"
Mutual Interaction	13-68 seconds	Conversation about school Flirting; mutual kissing (W) "I had a really good time" (M) "You look really nice tonight"
Woman's polite refusals; Man's apologies (mild)	68-109 seconds	Attempted light petting (W) "Dan, don't touch my breasts" (M) "I'm sorry…I just lose control"
Woman's continued refusals; Man's apologies	109-130 seconds	Repeated attempts at petting (W) "Don't touch my butt either" (M) "Ok, I'm sorry"
Man verbally pressures; Woman asserts her wants	130-190 seconds	Coercive verbal pressure for petting (M) "I know you want to have sex" (W) "I just need more time"
Reinitiation of kissing; Man touches woman's Genital area	190-228 seconds	Coercive attempts for heavier petting (W) "Get your hands off my crotch!" (M) "You act like you want it"
Women resists; Man Uses physical force	228-258 seconds	Physical aggression (W) "Stop it! Get off of me!" (M) "Don't fight me!"
Rape	258-292 seconds	Rape and after rape (W) "Dan, how could you? You raped me!" (M) "I didn't rape you. You wanted it and you know it"

Appendix B

TABLE 8: DESCRIPTIVE STATISTICS FOR SUBJECTS

Scale	M	SD	N
Decision Latency			
Overall	113.29	36.09	42
Control	92.19	14.56	21
Experimental	134.38	39.05	21
Blood Alcohol Concentration, 10 minutes			
Control	.002	.00	21
Experimental	.0395	.012	21
Blood Alcohol Concentration, 17.5 minutes			
Control	.002	.00	21
Experimental	.041	.009	21
Blood Alcohol Concentration, 22.5 minutes			
Control	--	--	--
Experimental	.0275	.007	2
Blood Alcohol Concentration, 27.5 minutes			
Control	--	--	--
Experimental	.031	--	1
Blood Alcohol Concentration, Post			
Control	.002	.00	21
Experimental	.03609	.005	21
Blood Alcohol Concentration, Completion			
Control	.002	.00	21
Experimental	.0234	.006	21
Pretest Intoxication Level Assessment			
Control	1.52	.75	21
Experimental	4.57	1.66	21
Posttest Intoxication Level Assessment			
Control	1.38	.60	21
Experimental	3.70	1.75	21
Perceived Number of Drinks			
Control	1.50	.7638	7
Experimental	2.69	.8212	21

Appendix C

TABLE 9: INTERCORRELATIONS AMONG SELF-REPORT MEASURES

	Total RMAS Score	Total SCS Score	Total SAS Score	Adult Victim of Sexual Assault	Victim of Childhood Sexual Assault	Decision Latency
Total RMAS Score Person Correlation Sig (2-tailed)	1.00	-.429 .006	-.385 .017	.221 .176	.101 .541	.510* .001
Total SCS Score Pearson Correlation Sig (2-tailed)	-.429 .006	1.00	.455* .003	-.318 .043	-.002 .988	-.294 .062
Total SAS Score Pearson Correlation Sig (2-tailed)	-.385 .017	.455* .003	1.00	-.100 .538	.007 .966	-.413 .008
Adult Victim of Sexual Assault Pearson Correlation Sig (2-tailed)	.221 .176	-.318 .043	-.100 .538	1.00	-.047 .766	.184 .244
Victim of Childhood Sexual Assault Pearson Correlation Sig (2-tailed)	.101 .541	-.002 .988	.007 .966	-.047 .766	1.00	-.222 .158
Decision Latency Pearson Correlation Sig (2-tailed)	.510* .001	-.294 .062	-.413 .008	.184 .244	-.222 .158	1.00

* Significant at the $p < .033$ level after a Bonferroni correction

Appendix D

TABLE 10: SUBJECT DECISION LATENCY BY GROUP

Group	Subject Number	Decision Latency Data
Control	2	92
	4	66
	7	65
	12	94
	13	101
	15	95
	16	92
	17	98
	18	95
	19	66
	20	95
	21	99
	23	92
	26	98
	27	87
	29	99
	31	90
	32	92
	34	92
	36	93
	43	135
Experimental	1	159
	3	126
	5	120
	6	111
	8	112
	9	150
	10	135
	11	142
	14	132
	22	113
	24	140
	25	115
	28	125
	30	119
	33	295
	35	124
	37	123
	38	124
	39	124
	40	126
	41	107

Appendix E

TABLE 11: QUALITATIVE VRQ DATA FOR FEMALE'S SOCIAL CONSEQUENCES

Segment	Control	Experimental	χ^2	*p*
Segment #1	--	--	2.045	.360
None	12	16		
Negative	5	2		
Positive	4	3		
Segment #2	--	--	9.743	.008
None	7	14		
Negative	11	2		
Positive	3	5		
Segment #3	--	--	4.348	.114
None	3	9		
Negative	12	8		
Positive	6	4		
Segment #4	--	--	3.403	.182
None	1	5		
Negative	17	14		
Positive	3	2		
Segment #5	--	--	4.804	.091
None	0	3		
Negative	18	14		
Positive	3	4		
Segment #6	--	--	2.773	.250
None	0	1		
Negative	20	20		
Positive	1	0		
Segment #7	--	--	.365	.545
None	1	2		
Negative	20	19		
Positive	0	0		
Segment #8	--	--	2.385	.303
None	1	4		
Negative	18	16		
Positive	2	1		

Appendix F

TABLE 12: QUALITATIVE VRQ DATA FOR MALE'S SOCIAL CONSEQUENCES

Segment	Control	Experimental	χ^2	*p*
Segment #1	--	--	2.087	.352
None	13	17		
Negative	3	1		
Positive	5	3		
Segment #2	--	--	1.698	.428
None	9	13		
Negative	4	2		
Positive	8	6		
Segment #3	--	--	2.181	.336
None	3	7		
Negative	15	12		
Positive	3	2		
Segment #4	--	--	1.644	.44
None	1	3		
Negative	19	16		
Positive	1	2		
Segment #5	--	--	7.609	.022
None	0	3		
Negative	21	16		
Positive	0	2		
Segment #6	--	--	.365	.545
None	2	1		
Negative	19	20		
Positive	0	0		
Segment #7	--	--	.00	1.00
None	1	1		
Negative	20	20		
Positive	0	0		
Segment #8	--	--	1.411	.235
None	0	1		
Negative	21	20		
Positive	0	0		

Appendix G

TABLE 13: QUALITATIVE VRQ DATA REGARDING STRATEGY

Segment	Control	Experimental	χ^2	*p*
Segment #1	--	--	4.185	.242
Nothing	19	20		
Verbal	0	1		
Physical	1	0		
Combination	1	0		
Segment #2	--	--	5.967	.051
Nothing	17	21		
Verbal	3	0		
Physical	1	0		
Combination	0	0		
Segment #3	--	--	5.154	.161
Nothing	2	8		
Verbal	11	8		
Physical	4	2		
Combination	4	3		
Segment #4	--	--	15.122	.002
Nothing	0	5		
Verbal	12	9		
Physical	4	7		
Combination	5	0		
Segment #5	--	--	2.206	.531
Nothing	1	4		
Verbal	13	11		
Physical	5	4		
Combination	2	2		
Segment #6	--	--	1.654	.647
Nothing	0	1		
Verbal	6	7		
Physical	11	10		
Combination	4	3		
Segment #7	--	--	2.331	.507
Nothing	0	1		
Verbal	5	4		
Physical	12	14		
Combination	4	2		
Segment #8	--	--	4.428	.219
Nothing	2	0		
Verbal	5	3		
Physical	10	15		
Combination	4	3		

Appendix H

TABLE 14: QUALITATIVE VRQ DATA REGARDING COMFORT LEVEL

Segment	Control	Experimental	χ^2	*p*
Segment #1	--	--	4.189	.381
Nothing	16	17		
Indiscriminate	0	0		
Surroundings	3	3		
Verbal Agg	1	0		
Physical Agg	1	0		
Combination	0	1		
Segment #2	--	--	4.344	.361
Nothing	10	16		
Indiscriminate	1	1		
Surroundings	0	0		
Verbal Agg	4	2		
Physical Agg	4	1		
Combination	2	1		
Segment #3	--	--	6.623	.157
Nothing	0	4		
Indiscriminate	6	6		
Surroundings	0	0		
Verbal Agg	2	1		
Physical Agg	9	8		
Combination	4	2		
Segment #4	--	--	5.24	.155
Nothing	1	2		
Indiscriminate	6	2		
Surroundings	0	0		
Verbal Agg	0	0		
Physical Agg	14	15		
Combination	0	2		
Segment #5	--	--	12.061	.017
Nothing	0	4		
Indiscriminate	5	9		
Surroundings	0	0		
Verbal Agg	13	4		
Physical Agg	1	2		
Combination	2	2		

Segment	Control	Experimental	χ^2	*p*
Segment #6	--	--	14.252	.007
Nothing	0	1		
Indiscriminate	7	5		
Surroundings	0	0		
Verbal Agg	7	9		
Physical Agg	1	6		
Combination	6	0		
Segment #7	--	--	5.766	.217
Nothing	1	0		
Indiscriminate	3	9		
Surroundings	0	0		
Verbal Agg	4	3		
Physical Agg	7	6		
Combination	6	3		
Segment #8	--	--	6.708	.152
Nothing	0	1		
Indiscriminate	4	8		
Surroundings	0	0		
Verbal Agg	1	1		
Physical Agg	10	10		
Combination	6	1		

Appendix I

SCREENING QUESTIONNAIRE

Please complete the following questions.

1. How old are you?_____

2. Do you have two valid, legal forms of identification with you today, at least one form being a form of picture identification? Yes No

3. Are you willing bring an escort to the session to accompany you home? Yes No

4. Have you had previous experience with consuming alcohol? yes/no)_____
   Have you had at least 1 drink in the past 30 days?
   (yes/no)_____
   Have you had at least 3 drinks in 1 sitting in the past 6 months?(yes/no)_____

5. Do you agree not to drive or operate machinery for at least twelve hours after your participation in this project? (yes/no)_____

6. Are you taking any prescribed medications on a regular schedule? (yes/no)_____
If yes, please name the
   medication(s):_____
   Are you taking any of the following medications: Sedatives, tranquilizers, psychotropic medications, or any other medication that modifies your ability to perform normal life actions? (yes/no)_____

7. Are you taking any over-the-counter medications regularly or have you taken any other the counter medications during the last 72 hours? (yes/no)_____
If yes, please name in the medication(s):_____
_____

8. Do you use antihistamines for the treatment of allergic symptoms or for any other reason? (yes/no)_____

9. Are you being treated for any chronic (on-going) medical problem? (yes/no)____
If yes, please describe the medical problem(s):_____
_____

10. Have you ever had or been treated for any of the following conditions: (please check each relevant condition)

- ❑ Diabetes or other endocrine disorder
- ❑ Allergy to alcohol
- ❑ Alcohol or other substance abuse
- ❑ High blood pressure or heart disease
- ❑ Gastritis or ulcer disease
- ❑ Depression
- ❑ Liver disease, hepatitis, or jaundice
- ❑ Kidney problems

- ❑ Seizures or a convulsive disorder

11. Have you been court-ordered not to drink alcohol? (yes/no)_____

12. Are you pregnant, think you might be pregnant, and/or planning to become pregnant? (yes/no):_____

13. What was the date of your last menstrual period? (*Appointments will only be scheduled during days 1-14 of your menstrual cycle)* _____

14. What was the date of your last experience of sexual intercourse? _____

15. What method (if any) of birth control do you use? _____

16. How regularly do you use this method of birth control?
    - o Every sexual encounter
    - o 75% of sexual encounters
    - o 50% of sexual encounters
    - o 25% of sexual encounters
    - o Never
    - o Not applicable

17. Are you aware of any medical or other reason that you should not participate in this study?_____

Please indicate if you've had significant problems or distress in these areas within the past 12 months (check applicable items):

- ❑ Recurrent substance use, resulting in a failure to fulfill major obligations at work, school, or home (e.g., substance-related suspensions, poor work performances related to substance use, etc.)
- ❑ Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile while intoxicated)
- ❑ Recurrent substance-related legal problems (e.g., arrests for disorderly conduct)
- ❑ Continued substance use despite having persistent or recurrent social or interpersonal problems caused or worsened by the effects of the substance (e.g., arguments with others about intoxication, physical fights)

For use of researcher

Results of pregnancy test: _____

Age of subject: _____

Appendix J

INTOXICATION LEVEL ASSESSMENT

Participant Code Number: _____

Intoxication Level Assessment

On a scale of 1 to 10, how intoxicated did you feel after consuming the beverage given to you? (1 = Not intoxicated at all, 10 = As intoxicated as I have ever been)

1	2	3	4	5	6	7	8	9	10
Not at all intoxicated				Moderately Intoxicated					As Intoxicated as I have ever been

Did the drink that I consumed contain alcohol? Yes No

If yes, approximately how many standard drinks did I consume? _____
(one drink = approximately 1.25 oz. hard liquor/a "shot", 1 glass of wine, or 1 beer)

Appendix K

VIGNETTE RATING QUESTIONNAIRE

Participant code number: _____

Vignette Rating Questionnaire

Please answer the following questions for the segment you just listened to. Circle the number that most appropriately corresponds to your reactions to the segment.

1. How much interpersonal risk was involved in this segment?

1	2	3	4	5	6	7	8
Extremely risky		Moderately risky		Mildly risky			Not at all risky

2. How much potential interpersonal benefit was involved in this segment (e.g. relationship enhancement, the establishment of a friendship, etc.)?

1	2	3	4	5	6	7	8
Extremely beneficial		Moderately beneficial		Mildly beneficial			Not at all beneficial

3. How assertive (ability to communicate her needs and wants) was the female in this segment?

1	2	3	4	5	6	7	8
Extremely assertive		Moderately assertive		Mildly assertive			Not at all assertive

4. How much social pressure was involved in this segment?

1	2	3	4	5	6	7	8
High degree of social pressure		Moderate degree of social pressure		Mild degree of social pressure			No social pressure

5. How aggressive was the male in this segment?

1	2	3	4	5	6	7	8
Extremely aggressive		Moderately aggressive		Mildly aggressive			Not at all aggressive

6. How responsible was the male for the conclusion in this segment?

1	2	3	4	5	6	7	8
Extremely responsible		Moderately responsible		Mildly responsible			Not at all responsible

7. How responsible was the female for the conclusion in this segment?

1	2	3	4	5	6	7	8
Extremely responsible		Moderately responsible		Mildly responsible			Not at all responsible

8. What are the social consequences for the female acting in the way she did in this segment (e.g. the male won't ask her out again, etc.)? Please respond below.

_____

_____

_____

9. What are the social consequences for the male acting in the way he did in this segment (e.g. he won't be able to go out with her again, etc.)? Please respond below.

_____

_____

_____

10. Pretend that you are the woman in this scene. What would you do or say right now?

_____

_____

_____

11. Pretend that you are the woman in the scene. Please list anything that happened in this scene that would make you feel uncomfortable.

_____

_____

Appendix L

CONSENT DOCUMENT

CONSENT, PG 1

CONSENT, PG 2

CONSENT, PG 3

Appendix M

HSIRB APPROVAL LETTER

HSIRB APPROVAL

Appendix N

LITERATURE REVIEW

LITERATURE REVIEW

Rape is defined as the sexual penetration of another person against his/her will by the use of force, threat of force, or verbal coercion (Bohmer, 1991). Benson, Charlton, and Goodhart (1992) estimated that one in four college-aged women has been the victim of a rape; 84% of victims knew their assailants and 57% of these assaults occurred while on dates. The prevalence of date rape is also higher among college students than it is outside of college communities. Women aged 16 to 24 are in the highest risk category, more than four times greater than any other group (Fritner & Rubinson, 1994). "In addition to the increased risk of sexual assault, college females are more likely to be assaulted by someone they know and less likely to successfully avoid these assaults when they are acquainted with the perpetrator" (Yeater, E. & O'Donohue, 1999).

It also is important to note that many women are coerced into unwanted sexual activity in more subtle ways that may not meet the legal definition of rape (Emmers-Sommer & Allen, 1999). When regarding sexual assault on a continuum including more subtle forms of coercion, Koss claimed that over 50% of women have been sexually assaulted (Gavey, 1999).

Consequences for Victims

Rape has important and significant emotional consequences for victims. These effects generally involve trouble establishing trust in relationships, fear, restriction of activities, sexual dysfunction, self-blame, and higher levels of general psychological distress (Resnick, 1993). Within one week of a rape, 94% of women met the criteria for Acute Stress Disorder; in 47% of these women, symptoms

persisted after three months (Kilpatrick, Vernon, & Resnick, 1979). It is believed that trauma from a rape produces higher rates of Posttraumatic Stress Disorder (PTSD) than other traumas such as natural disasters (Calhoun & Wilson, 2000). In addition, rape-related PTSD symptoms such as fear and anxiety persist long after the diagnosis is no longer met (Calhoun & Wilson, 2000).

It has also been documented that victims of rape are at risk for revictimization (Wilson, Calhoun, & Bernat, 1999; Naugle, 1999). Consequences of rape, such as low-self esteem and depression, may increase the risk and vulnerability for future victimization (Marx, Van Wie, & Gross, 1996). Victims of child and adolescent sexual abuse have been found to have twice the risk for adult sexual assault than those not abused (Gidycz, Coble, Latham, & Layman, 1993; Calhoun & Wilson, 2000). It has been hypothesized that the mechanism underlying this increased risk is poor risk recognition because the ability to perceive risk is contingent upon one's ability to protect oneself in the face of threatening cues (Calhoun & Wilson, 2000; Wilson, Calhoun, & Bernat, 1999). However, this may also be because of skill deficits in utilizing response strategies (Yeater & O'Donohue, 2002).

When controlling for rape-related injuries, effects on health have been documented as well, such as immune suppression, pregnancy, and infection with HIV or other sexually transmitted diseases. In fact, rape victims are over three times as likely to be infected with HIV when compared with urban dwelling women (Calhoun & Wilson, 2000) and 92% show fear and concern about contracting HIV (Resnick, et al., 2002). Adolescent victims show an increased risk for disordered eating behaviors (Ackard & Newmark-Sztainer, 2002). Direct injury also occurs

that may impact health, such as vaginal bleeding, tissue damage, and injuries resulting from escape or escape attempts (Gidycz & Koss, 1991). Research has shown that victims more frequently report poor health, limitations in functioning, and a lower likelihood of seeking medical care in the years following the attack than nonvictims (Gidycz & Koss, 1991).

Rape by an acquaintance often exerts a greater psychological toll than rape by a stranger (Yeater & O'Donohue, 1999; Burnam, et al., 1988). Victims typically experience sleep disturbances, nightmares, intrusive thoughts, sexual dysfunction, self-blame, decreased concentration, loss of interest in normal activities, and guilt (Bowie, Silverman, Kalick, & Edbril, 1990; Burnam, Stein, Golding, Siegel, Sorenson, Forsythe, & Telles, 1988). Because these assaults occur more often in one's home or one's vehicle, a victim may develop conditioned fear responses to their homes and cars. They may also report feelings of insecurity, loss of safety, and mistrust of others (Maletzky, 2000). In addition, victims of acquaintance rape are less likely to label their experience as a rape, seek treatment for injuries, discuss the assault with others, and report the assault to authorities (Koss, 1988). They are also more likely to blame themselves because of their prior association with the perpetrator (Gidycz & Koss, 1991).

Research on Perpetrators

In addition to the increased risk of being a victim of rape while in college, perpetrators are most likely to engage in rape when they are under 25 years old (Frintner & Rubinson, 1993; Benson, et al., 1992). In Kanin's (1984) descriptive study of 71 self-admitted rapists, 82% of the sample were college students.

Relatedly, perpetrators are most likely to engage in acts that meet the definition of rape when they are under 25 years old (Frintner & Rubinson, 1994; Benson, et al., 1992). The peak of aggressive sexual activity is reported to occur between the ages of 16-29 years (Prentky & Knight, 1991). Research suggested that 1 out of 13 men reported having sexually assaulted someone (Yeater & O'Donohue, 1999), and Malamuth, Sockloskie, Koss, and Tananka (1991) reported that approximately 35% of men in college indicated that they would sexually assault someone if they were assured that they would not get caught.

Research has shown that rapists are more likely to hold adversarial beliefs regarding women, endorse rape myths, and endorse traditional gender roles (Marx, Van Wie, & Gross, 1996). Perpetrators frequently reported that women use "token resistance", which is a belief that women that say "no" when they really mean "yes" (Muehlenhard & Rodgers, 1998). Research also indicated that male arousal plays a role in date rape, which is mediated by situational factors and perceived female consent (Marx, Van Wie, & Gross, 1996; Abbey, et al., 2002).

Members of fraternities and sports teams are hypothesized to play a larger role in date rape than members of the general college population. Frintner and Rubinson (1993) investigated the possibility of an increased risk of sexual violence perpetrated by fraternity and sports-team members. Surveyed fraternity members were found to be involved in 63% of sexual assaults and 71% of sexual abuse cases, although only 25% of college men belonged to fraternities. Also, 42% of sexual abuse cases and 24% of sexual assault cases were committed in a fraternity house. In addition, although only 2% of college men were athletes, this group was involved in 20.2% of sexual assaults and 13.6% of sexual abuse cases. It is believed that the

higher level of alcohol use in this population and masculine-aggressive subculture contributed to these high rates (Murnen, Wright, & Kaluzny, 2002).

Much research has focused on the consequences of victimization; only recently has attention been directed at understanding the actions of the perpetrators. Among common theories postulated to explain the use of physical or emotional coercion to attain sexual goals, the behavior pattern most clearly labeled as rape, are attraction to sexual aggression (Bernat, Calhoun, & Adams, 1999), deviant sexual arousal (Bernat, Calhoun, & Adams, 1999), lack of empathy (Marshall, Hudson, Jones, & Fernandez, 1995), endorsement of rape myths (Burt, 1980), lack of social consciousness (Maletzky, 2000), token resistance (Muehlenhard & Rodgers, 1998), acceptance of interpersonal violence (Burt, 1980), holding adversarial sexual beliefs (Simonson & Subich, 1999; Burt, 1980), hostile masculinity (Malamuth, Sockloskie, Koss, & Tanaka, 1991) miscommunication (Rapaport & Posey, 1991; Yeater & O'Donohue, 1999), hypermasculinity (Mosher & Kirkin, 1984), and impulsivity, irresponsibility, and undersocialization (Bernat, Wilson, & Calhoun, 1999; O'Donohue, McKay, & Schewe, 1991). The hypotheses with the most empirical support are the hypermasculinity and hostile masculinity theories (Murnen, Wright, & Kaluzny, 2002).

Research does not support the contention that women are unclear with their signals (Koss, 1988) but does suggest that the perpetrator's misperception is mainly responsible for the majority of attacks. Koss (1988) reported "most men (88%) who reported an assault that met the legal definition of rape were adamant that their behavior was definitely not rape" (p. 19). American culture encourages males to be the aggressors in sexual relationships and for women to be the passive participants

who must be "talked into" in sexual activities after offering some initial resistance (Murnen, Wright, & Kaluzny, 2002). In this ambiguous situation, it is possible that women's cues may not be properly decoded by men. Benson, et. al. (1992) reported that 84% of men who engaged in a sexual act that met the legal definition of rape did not define the act as such. Research suggests that most perpetrators do not label their sexually coercive behavior as rape.

Some researchers have found evidence to support a hypothesis that perpetrators have difficulty detecting these inhibitory signals. For example, researchers found that sexually aggressive men are significantly less accurate at detecting cues than are non-aggressive men (Lipton, McDonel, & McFall, 1987; McDonel, 1986; & Malamuth, Heim, & Feshbach, 1990). Perpetrators of sexual assault frequently report being unclear as to whether their acts met the definition of sexual assault and report having misinterpreted their partner's intentions (Muehlenhard & Rodgers, 1998). Thus, it is possible that one of the contributing factors to the high prevalence of date rape is the failure of men to detect and accurately interpret women's verbal and nonverbal communication to cease and desist with sexual advances.

Some researchers investigated variables controlling perpetrator's behavior. Bernat et. al. (1999) used a date rape analog to investigate cognitive factors, specifically calloused sexual beliefs, and it's relationship to a decision-latency task. They found that sexually coercive men may operate with a cognitive set that potentiates increasing levels of sexual coercion, and suggest that this decisional process may be a target of intervention. Providing information to alter this decisional process may help alter this cognitive set. This study provides support for

Bondurant and Donat's (1999) and Breitenbecher (2000) suggestion that research is needed on sexually aggressive men's ability to process behavioral cues.

There has been a greater interest in perpetrator's lack of social skills and impaired decoding ability as of recent. It is reported that rapist's fail to understand aspects of a woman's verbal and nonverbal behavior that communicates that she does not want sexual relations (Calhoun & Wilson, 2000). Perpetrators also report that women are more sexually aroused than she is (Kanin, 1984). Lipton, McDonel, and McFall (1987) found that "incarcarated rapists were more likely than nonrapists to make mistakes in interpreting women's behavior, but not men's", when watching videotapes (p. 587). Bernat, Stolp, Calhoun, and Adams (1997), in attempting to validate decision latency measures used in date rape research, found that this task positively correlated with self-reports of sexual aggression, calloused sexual beliefs, sexual promiscuity, and acceptance of interpersonal violence. They recommended that follow-up studies investigate factors that affect a respondent's sexual decision-making ability and whether laboratory treatment interventions can reduce decision latency scores (Bernat, et. al., 1997).

Relatedly, Marx and Gross (1995) proposed an operant analysis of date rape with regard to competing contingencies, whereby

> The male may learn that increasingly assertive behavior results in reinforcement. In this analysis, the woman's verbal no loses its discriminative stimulus power as an indicator of the unavailability of reinforcement for a given behavior and may develop as a discriminative stimulus for sexual persistence. (p. 460)

This situation may occur when the perpetrator attempts to change the victim's mind after she states that she does not wish to have sexual intercourse. If the perpetrator is successful in this goal, the resulting intermittent reinforcement can increase the

future frequency of sexual persistence. Later, extinction bursts of aggressive behavior may occur if a victim fails to reinforce the perpetrator's advances. This type of shaping may result in the perpetrator learning that increasing acts of sexual persistence can result in sexual intercourse (Marx & Gross, 1995).

However, increasing legal consequences may also act as a deterrent for sexual persistence. A study investigating sensitizing men to the legal definitions of rape and legal consequences by Pinzone-Glover, Gidycz, and Jacobs (1998) showed that men were better able to accurately identify assaultive situations, thus reducing their risk of engaging in sexually aggressive behavior. This suggests that providing a competing punishment contingency for unwanted sexual persistence may mediate one's risk of sexually aggressive behavior. Because of the limited evidence that prevention programs can alter attitudinal or affective aspects of sexually aggressive men (Lonsway, 1996), it might be more beneficial to focus on more salient, personal consequences to the perpetrator. Perpetrators may not recognize their responsibility for stopping rape until they are more sensitized to applicable contingencies.

Sexual Assault's Association with Alcohol

Benson (et al., 1992) reported that in a general sample of victims and perpetrators, 73% of assailants and 55% of victims were under the influence of alcohol at the time of the attack. Alcohol has been described as a "social lubricant" by researchers, and 60% of male students reported using alcohol to attain sexual contact (Benson, et. al., 1992). This has important implications for general dating behavior because the effects of alcohol impairs the judgment of both the victim and the assailant, reduces a man's inhibitions and increases aggression, and interferes

with a woman's ability to resist a perpetrator during a sexual assault (Frintner & Rubinson, 1993). It has also been demonstrated that intoxication during a sexual assault lessens blame for the perpetrator but heightens blame for the victim (Richardson & Campbell, 1982). Because of the strong association between alcohol and sexual assault, it is necessary to investigate these variables.

Physiological Effects of Alcohol

There is no direct relationship between alcohol's pharmacological effects and its behavioral correlates (Briddell, Rimm, Caddy, Krawitz, Sholis, & Wunderlin, 1978). However, alcohol clearly has an effect on social behaviors (Steele & Southwick, 1985). It also has what is commonly termed an "expectation effect" (Steele & Southwick, 1985), when consumption of even small amounts of alcohol can cause dramatic changes in conditioned and operant behavior. However, it has profound physiological and psychological effects when consumed in sufficient quantities (Steele, Critchlow, & Liu, 1985; Steele & Southwick, 1985).

Commonly seen behavioral effects are extreme behavior (Pernanen, 1976), motor impairment (Abbey, et al., 2002a), alteration of motivational states (Hull & Bond, 1986), impairment of perceptual and cognitive functioning (Steele & Southwick, 1985), disruption in the interpretation of complex stimuli (Abbey & Melby, 1998), and the impairment of task performance (Steele & Southwick, 1985). Alcohol also has an anxiolytic effect that can reduce inhibitions to performing behavior that typically evokes negative consequences (Seto & Barbaree, 1995). It can also act as a stimulant which results in increased arousability (Seto & Barbaree, 1995).

Alcohol is frequently is associated with violent behavior (National Commission on the Causes and Prevention of Violence., 1970). In studies involving subjects who have been provoked under alcohol and no-alcohol conditions, sober subjects showed an increased ability to identify inhibiting cues and competing contingencies for violent responses that allowed them to avoid extreme reactions (Zeichner & Pihl, 1979). However, intoxicated subjects were unable to process inhibiting cues and thus reacted violently (Zeichner & Pihl, 1979). In addition, alcohol impairs one's ability to react to peripheral cues (Steele & Southwick, 1985), thereby decreasing one's ability to be affected by negative and positive consequences.

Alcohol and Sexuality

Extreme behaviors related to alcohol use are not only observed in aggression, but also in sexual behavior. Because alcohol commonly causes a narrowing of the perceptual field and lowers one's ability to attend to multiple cues, only the most salient cues are typically detected (Abbey, Zawacki, & McAuslan, 2000; Abbey, Ross, McDuffie, & McAuslan, 1996; Abbey, Ross, McDuffie, & McAuslan, 1996b). The most salient cues in sexually ambiguous situations are typically cues that confirm one's sexual hypotheses. Inhibitory cues tend to be ignored while under the influence of alcohol (Abbey, et al., 2000; Abbey, et al., 1996; Abbey, et al., 1996b). This has been termed an 'alcohol myopia' effect (Steele & Josephs, 1990).

Alcohol expectancies are rule-governed; if a perpetrator is looking for evidence that his partner is attracted to him, he typically attends to confimatory evidence and ignores inhibitory cues (Abbey, et al., 2000; Abbey, et al., 1996). For

example, sober men commonly rate women as behaving more sexually than the woman actually intended (Abbey & Harnish, 1995; Abbey,Cozzarelli, McLaughlin, & Harnish, 1987; Abbey, 1982; Abbey & Melby, 1986). Compounding this effect, when a woman or man is drinking, men rate women as being more sexually available than when he or she is sober (Abbey, Zawacki, & McAuslan, 2000; Abbey & Harnish, 1995; Abbey & Melby, 1986).

Relatedly, if a woman is looking for evidence that her partner will respect her wishes and not become sexually coercive, the attended-to cues will typically be confirmatory ones, while ignoring conflicting evidence. Women, in particular, tend to interpret men's behaviors in the opposite direction as men rate women's behaviors (Abbey, et al., 2000); women commonly rate men as behaving less sexually than the men intended to behave (Abbey, et al., 2000). This biased interpretation of behavior between the sexes sets the stage for miscommunication, misinterpretation, and sometimes more extreme consequences of sexual assault (Abbey, et al., 2000).

The same effects have been found with expectancy studies. The mere suggestion that a drink contains alcohol is likely to cause a misperception of cues involving sexuality (Abbey, et al., 2000; Abbey, et al., 1996; Abbey, et al., 1996b; Abbey & Melby, 1986). The presence of alchol can function as a conditioned stimulus that elicits disinhibited behavior approximate to one's conditioning history (Hull & Bond, 1986; Marlatt & Rohsenow, 1980). According to Hull and Bond (1986), a "precondition for expectancy effects is that the individual wants to act out his sexual or aggressive drives" (p. 355). Alcohol expectancies are not believed to be a direct causal factor for sexual aggression (Abbey, McAuslan, & Ross, 1998),

but it is believed that expectancies increase alcohol consumption which results in increased misperception of sexual cues.

Alcohol and Sexual Assault

A number of researchers found a strong association between alcohol and sexual assault (Seto & Barbaree, 1995; Abbey, 1991; Abbey & Harnish, 1995; Richardson & Campbell, 1982; Fritner & Rubinson, 1993; Abbey, et al., 2000; Bernat et al., 1999). Seto and Barbaree (1995) found that rapists and victims consumed alcohol in over half of reported incidents. Other researchers found that alcohol use prior to a sexually aggressive incident are as high as 80% for men and women (Koss, 1988; Nurius, 2000). In addition, a woman's level of alcohol consumption is more highly correlated with completed rather than attempted rapes (Abbey & Ross, 1992). However, women are likely to underestimate the role of alcohol as a personal risk factor for sexual assault (Breitenbecher, 1999).

Heavy use of alcohol is strongly associated with an increased risk for sexual assault (Muehlenhard & Linton, 1987); two-thirds of rape victims in a hospital sample involved the victim's use of alcohol (Slaughter, 2000). In a survey of college students, Koss and O'Neill found that alcohol use was one of the four strongest predictors for date rape (1988). Other studies have discovered that of men who self-reported engaging in actions that met the legal definition of rape, 26% reported being intoxicated at the time of the assault and 29% reported being "mildly buzzed" (Benson, et. al., 1992). Similarly, studies have shown that 84% of a sample of men involved in acquaintance rape were under the influence of alcohol at the time of the assault (Frintner & Rubinson, 1993). The use of alcohol is more common for

casual dates than for steady dates with victims and with perpetrators (Koss, Gidycz, & Wisniewski, 1987, in Marx, Gross, & Juergens, 1997), and it is arguably more difficult to decode cues with individuals with which one is less familiar.

A number of researchers studied the effects of alcohol on sexual assault. Finley and Corty (1993) found that the use of alcohol in sexual assault occurred twice as often as the use of force. Sexual assault by force occurred in 11.5% of the sample and sexual assault involving alcohol occurred in 27.6% of the sample (Finley & Corty, 1993). In reviewing data given by men, they discovered that 19% of men used alcohol to coerce women into sexual activity (Finley & Corty, 1993). Finley and Corty advised colleges and universities to more closely examine this relationship and to inform students about the strong relationship between alcohol and sexual assault (1993).

In a campus-wide survey, Abbey and Harnish (1995) investigated the link between alcohol consumption, gender, rape-supportive attitudes, and acquaintance rape. They found that people believe that alcohol enhances perceptions of sexuality and that men perceive this enhancement to a greater extent than do women. They suggested that men view women who drink alcohol as more sexually promiscuous than women who abstain. Alcohol is argued to be strongly associated with the college social scene and with sexuality for both males and females. Misperception and miscommunication are frequently associated with sexual assault (Abbey, 2000; Abbey et al., 1996). Moreover, the frequency with which a woman's cues are misinterpreted in a dating situation is positively related to being the victim of sexual assault (Abbey, et al., 1996). Compounding this phenomenon, Abbey reported the

likelihood of misperception increases when either the victim or the perpetrator consumes alcohol (et al., 1996; 1996b).

Findings of victim blame also increase following alcohol consumption before a sexual assault. Researchers found that a woman's use of alcohol increased subject's ratings of victim responsibility for her attack and justification for the perpetrator's violence (Norris & Cubbins, 1992; Emmers-Sommer & Allen, 1999; Wild, Graham, & Rehm, 1998; Abbey & Harnish, 1995; Stormo, Lang, & Stritzke, 1997; Richardson & Campbell, 1982; George, Gournic, McAfee, 1988).

Miller and Marshall (1987) found that over 50% of women who endorsed being a victim of sexually coercive experiences on the Sexual Experiences Survey (SES) reported using alcohol or other drugs at the time of the assault; therefore, they concluded that the use of alcohol may impair a woman in her ability to resist unwanted sexual advances. In addition, alcohol consumption is associated with an increased severity of sexual assault (Ullman & Knight, 1993). Intoxicated women have reported participating in greater levels of consensual sexual activity with the perpetrator immediately prior to a sexual assault as well as offered less resistance than non-intoxicated women during the assault (Harrington & Leitenberg, 1994). Alcohol caused a slowed reaction time and a less effective response to an attack (Harrington & Leitenberg, 1994). Research shows that alcohol decreases a woman's capacity to engage in defensive and effective physical resistance, particularly if caught off-guard by a perpetrator (Nurius, 2000).

A woman's ability to detect risky sexual cues is key to self-protection (Norris, Nurius, & Graham, 1999). Early recognition that a social situation may become threatening can help in preventing sexual aggression (Norris, et al., 1999).

Studies suggest that early and prompt verbal and physical resistance is of utmost importance in successfully escaping rape attempts (Abbey, 1991). However, many of the cues associated with risk factors for sexual assault are also associated with elements common to socialization (Norris, et al., 1999). For example, drinking alcohol is a common element to socialization; women might ignore this as a risky behavior.

Dating situations contain many ambiguous cues. It may be difficult for a woman to interpret ambiguous cues as threatening, because they have been previously associated with positive consequences and not associated with threatening outcomes (Norris, et al., 1999). "Over time, she may have developed strong positive associations between these factors and her interactions with men and consequently looks forward to them rather than avoids them" (Norris, et al., 1999, p. 237). In addition, a woman's learning history with regard to positive alcohol expectancies conflict with any threatening cues in the environment. The most salient and attended-to cues in this environment are typically positive arousal cues (Corbin, Bernat, Calhoun, McNair, & Sears, 2001).

Relatedly, although cumulative risk for sexual aggression is high, the probabilistic risk of being the victim of sexual aggression on one given occasion is low (Norris, et al., 1999; Nurius, 2000). If one is not motivated to be attentive to threatening cues, and if alcohol impairs one's ability to react to threatening cues, one's risk is increased (Norris, et al., 1999; Nurius, 2000). Alcohol myopia affects sexual aggression by making it "easier for some men to commit sexual assault because it allows them to focus on their immediate feelings of sexual arousal and

entitlement rather than on more distal cues such as the women's discomfort or the potential for later punishment" (Abbey, et al., 2002a, p. 100).

Steele and Josephs (1990) argued that the disinhibiting effects of alcohol results in "alcohol myopia". This theory suggests that in a conflict situation, cues signaling the perpetrator to stop his sexual advances are not as salient as other disinhibitory cues. Alcohol increases the risk that misperception will occur because of a decreased ability to detect inhibitory signals and a narrowing of the perceptual field (Steele & Josephs, 1990). An impaired ability to cognitively process events may lead to date rape.

Seto and Barbaree (1995) also argued that:

> "Holding stronger a priori beliefs in the disinhibiting properties of alcohol increases the likelihood that alcohol will act as a disinhibitor when it is consumed. Consuming alcohol permits an individual (and observers) to refer to more liberal norms in evaluating any socially censured behavior in which an individual engages, to the degree that disinhibition of behavior is expected. The larger amount of alcohol consumed in natural situations…have pharmacological effects that include the impairment of an individual's ability to process inhibitory cues such as the woman's nonconsent and distress." (p. 558)

Current Research on Alcohol's Association with Sexual Assault

Few studies have investigated alcohol consumption on signal detection abilities. Marx, Gross, and Juergens (1997) investigated the effects of alcohol consumption on men's abilities to perceive sexual coercion depicted on an audiotaped vignette. The investigators found significant effects for participants who received alcohol; they took significantly longer to determine when the man on the audiotape should refrain from making further sexual advances ($p<.001$). They also reported that alcohol impaired one's ability to abstract, conceptualize, encode, and

use situational cues, which may be an important variable in date rape (Hull & Bond, 1986; Steele & Southwick, 1985; Steele & Josephs, 1990). The authors suggested that future studies utilize this methodology to investigate how alcohol consumption interferes with a woman's risk level detection (Marx, et al., 1997).

Bernat, Calhoun, and Stolp (1998) conducted a study on sexually aggressive versus nonaggressive men's response latencies to a date rape vignette. Although alcohol consumption was not manipulated, they found that sexually aggressive men's response latencies typically were eight times longer than their nonaggressive counterparts when they were instructed that the couple depicted in the vignette was drinking alcohol. The authors suggested that future studies should manipulate subject's level of alcohol consumption.

As a follow-up study, Marx, Gross, and Adams (1999) manipulated subject's level of alcohol consumption in aggressive and nonaggressive men. Aggressive and nonaggressive men who consumed alcohol took significantly longer than subjects who did not consume alcohol to determine when the man in the analogue should refrain from making further sexually aggressive advances. This suggests that sexually noncoercive males behave similarly to coercive males when under the influence of alcohol (Marx, et al., 1999). They suggested that follow-up studies be conducted with women to determine if alcohol consumption or expectancies affects women's risk detection.

A recent unpublished dissertation investigated variables involving women's risk recognition in a date rape vignette (Lewis, 2002). Participants were assigned to one of four conditions which involved a 2 (alcohol .08% BAC vs. no-alcohol) x 2 expect alcohol vs. expect no-alcohol) x 2 (victimization history vs. no victimization

history) design. Results showed that women's level of risk recognition did not differ significantly between groups and the expectancy manipulation was not believable for subjects because of the high level of alcohol administered. However, women who consumed alcohol reported that they would feel more overwhelmed if they were in the scenario than their non-drinking counterparts. They also differed in their preference to use unassertive resistance versus assertive resistance. The lack of significance on the decision latency task was a surprising finding and must be replicated.

Future Research on Alcohol and Sexual Assault

To date, no factor has been identified as a necessary or sufficient cause of sexual aggression (Schewe & O'Donohue, 1993); the identification of antecedents to sexual aggression can assist in this process. In addition, investigation of the effect of alcohol on sexual behavior in general has focused on men because of ethical dilemmas with using female subjects (Wilson, 1981).

There has been a call for research that assists in identifying causal variables in sexual assault and variables interfering with accurate risk detection (Yeater & O'Donohue, 1999). Namely, Norris (et al., 1999) and Corbin (et al., 2001) suggested that future research should address the critical question of whether alcohol consumption itself decreases a victim's ability to detect risk. Abbey (et al., 1996) also reported that more research is needed regarding the mechanisms of how alcohol itself increases the risk of sexual assault. However, limited research to date has been conducted on how women's consumption of alcohol impairs their ability to attend to threatening cues (Lewis, 2002).

Correlational research demonstrated that alcohol impairs the judgment of both the victim and the assailant, reduces a man's inhibitions and increases aggression, and interferes with a woman's ability to recognize and respond to dangerous cues in sexual interactions and resist a man during a sexual assault (Frintner & Rubinson, 1993; Wilson, et al., 1999). Although alcohol is associated with as many as 80% of sexual assaults (Kanin, 1984), there is not a clear understanding of alcohol's contribution (Nurius, 2000; Norris, Hughes, & Wilsnack, 1994). Equally important is researching the ways in which alcohol can affect a woman's ability to detect a threatening situation before engaging in a behavioral response (Nurius, 2000).

It is important to emphasize that although investigations into the effect of alcohol on women's risk detection are needed, it is not intended to support the myth that women who drink alcohol "ask for" sexual aggression (Burt, 1980). Responsibility for sexual aggression must ultimately lie with the perpetrator. However, research on common antecedents to sexual aggression can assist in developing more effective prevention strategies and empowering victims of sexual assault.

Current Sexual Assault Prevention Research

Breitenbecher (2000) indicated that the necessary questions when evaluating sexual assault prevention research is not what is effective, but what constructs of prevention programs are shown to be effective. Current prevention programs typically focus on the following constructs: Attitudes, behavioral intentions, self-reported behaviors, directly observed behaviors, sexual victimization, sexual

aggression, program content, program delivery format, program effectiveness, and audience composition (Breitenbecher, 2000). She noted that all published prevention research showed significance on at least one dependent variable, and only four out of thirty-eight published studies reported nonsignificance on all dependent variables (Breitenbecher, 2000).

Prevention programs evaluating attitude change attempt to alter rape myth acceptance, attitudes toward rape, adversarial sexual beliefs, responses to rape vignettes, acceptance of interpersonal violence, knowledge about sexual assault, attitudes toward women, rape empathy, sex role stereotyping, responses to a rape trial, and sexual conservatism (Breitenbecher, 2000). Short-term positive effects were demonstrated with reducing rape myth acceptance, modifying attitudes toward rape, and increasing knowledge about sexual assault, although these gains decreased over time (Breitenbecher, 2000). Moderate support was shown for modifying adversarial sexual beliefs, while mixed support was shown for modifying participants' responses to a sexual assault vignette and increasing attitudes toward women (Breitenbecher, 2000). No support was shown for reducing acceptance of interpersonal violence, increasing empathy toward rape victims, reducing sex role stereotyping, modifying participants' responses to a rape trial, and modifying sexual conservatism (Breitenbecher, 2000). In addition, most of these prevention programs focus on women, who are not the optimal targets of prevention programs (Yeater & O'Dohohue, 2002).

Regarding behavioral intentions, investigated variables included the likelihood to engage in sexually aggressive behavior, dating behaviors, and responses to a videotaped sexual conflict (Breitenbecher, 2000). These results were

mixed for males, although females were more likely to change their responses to videotaped situations by using more direct verbal resistance in future trials (Breitenbecher, 2000).

Self-reported behavior change programs includef altering dating behaviors and improving sexual communication (Breitenbecher, 2000). The literature revealed fairly consistent support for changing risk-related dating behaviors, such as alcohol consumption and having multiple sexual partners, while nonsignificant differences were discovered on two studies investigating the improvement of sexual communication and assertiveness (Breitenbecher, 2000).

Prevention programs investigating directly observed behaviors focused on naturalistic phone calls and rape conformity assessment (Breitenbecher, 2000). Naturalistic phone calls are innovatively used to "assess the stability of intervention effects" (p. 30), which measure participants' willingness to volunteer for a rape crisis center or a woman's safety project (Breitenbecher, 2000). These programs showed mixed results and this method of follow-up assessment has not been validated (Breitenbecher, 2000). Nonsignificant differences were found with rape conformity assessment programs, where a subject is placed in a group with two confederates who respond with rape-supportive attitudes in order to test the subject's level of conformity (Breitenbecher, 2000).

Prevention programs that assess effects on sexual victimization and sexual aggression are less likely targeted. Only three studies assessed changes in sexual victimization, usually by attempting to alter dating behaviors. These studies showed a lack of success and may not be effective for most women (Hanson & Gidycz, 1993; Breitenbecher & Gidycz, 1998; Breitenbecher & Scarce, 1999). Surprisingly,

only two studies investigated whether a program would reduce sexual aggression in males (Heppner, Neville, Smith, Kivlighan, & Gershuny, 1999; Linz, Fuson, & Donnerstein, 1990). Both studies had inconclusive results (Breitenbecher, 2000). Interestingly, no studies have been conducted to evaluate the effectiveness of women's self-defense programs (Yeater & O'Donohue, 1999; Lonsway, 1996).

The last variable that is typically investigated in prevention programs involves the format of the program itself. Program content, delivery format, and effectiveness as well as the audience composition are investigated in order to determine the best delivery format (Breitenbecher, 2000). Investigations comparing the effectiveness of different program contents and delivery formats showed that differences are equivalent in effectiveness (Breitenbecher, 2000). Regarding audience composition, the data suggested a positive trend for single-sex programs and single-sex male-only programs (Breitenbecher, 2000).

Weaknesses of Existing Prevention Literature

Weaknesses in the existing date rape literature include a lack of information on the following variables: Follow-up assessment, specific type of programming that produced a significant change, information on treatment gains and maintenance, the theoretical models employed, evaluation of programming competence, dismantling studies, definitional agreement, systematic replication, rigorous experimental research, and random assignment (Marx, et al., 1996; Lonsway, 1996; Yeater & O'Donohue, 1999; Breitenbecher, 2000). In addition, studies commonly use low-risk groups, fail to control for demand characteristics and sensitization effects, use psychometrically unsound dependent measures, and fail to address issues

of clinical versus statistical significance (Marx, et al., 1996; Lonsway, 1996; Yeater & O'Donohue, 1999; Breitenbecher, 2000). The lack of standardization in research on prevention methods leads to large differences in the applicability and generalization of results (Yeater & O'Donohue, 1999).

A significant issue in date rape prevention research is the lack of a sound theory with which to address date rape. There is a wide range of strategies that are based upon different theoretical orientations; a literature review by Fischhoff, Furby, and Morgan (1987) identified 1,140 possible strategies with which to decrease the incidence of rape. Even with this large number of possible strategies, there is no comprehensive, unifying theory that translates into successful prevention strategies.

Most prevention strategies are based on interventions that are less than 2 hours in length and incorporate such strategies as providing statistics regarding the prevalence of date rape, discussing rape mythology, providing information about sex role socialization, identifying risky dating behaviors, and increasing empathy for rape survivors (Breitenbecher, 2000). However, the empirical evidence that the interventions produced the postulated changes and impacted sexually aggressive behaviors is limited. Even though services and interventions have greatly improved for rape victims and research is continuing to improve, "there is no evidence that rates of rape are decreasing as rapidly as rates for other violent crimes" (Calhoun & Wilson, 2000, p. 573).

In addition, many programmatic strategies lack a follow-up assessment or are employed when there is evidence that they do not work. According to a literature review by Breitenbecher (2000), there is weak to moderate support for prevention programs in improving attitudes toward women and weak support in increasing

levels of empathy toward victims and reducing stereotypic sex role beliefs. In fact, one study actually reports that empathy-induction techniques actually resulted in an increase in self-reported likelihood to commit rape (Berg, Lonsway, & Fitzgerald, 1999). Support for rape myth acceptance reduction appears to be effective in the short-term, but deteriorates over time (Breitenbecher, 2000). However, many programs continue to utilize these strategies.

A major problem with the existing literature is the assumption that changing a perpetrator's attitude actually changes behavior; no evidence supports this claim, though it makes intuitive sense (Yeater & O'Donohue, 1999). Many rape prevention programs that involve high-risk men teach them to use empathy to identify with the victim and as well as targeting the frequency of their rape-supportive cognitions. However, the assumption that this changes overt behavior is lacking empirical support. By challenging this logic, one questions the very foundation that many rape prevention programs use to target behavior (Lonsway, 1996). A systematic literature review did not find evidence that changing a perpetrator's rape-supportive cognitions and acceptance of interpersonal violence without actually trying to directly change one's sexually aggressive behavior produced any significant, long-term behavioral changes (Lonsway, 1996). To improve upon outcome measures, researchers must utilize measures that examine the frequency of different chains of sexually aggressive behavior and use socially validated follow-up measures and behavioral analog detection measures in order to assess actual clinical significance.

Of particular concern is that most prevention programs fail to include those who control sexually aggressive behavior and commit the majority of the crimes—high-risk males (Anderson, Cooper, & Okamura, 1997; Briskin & Gary, 1986; Ring

& Kilmartin, 1992; Rosenthal, Heesacker, & Neimeyer, 1995; Schewe & O'Donohue, 1993; Berg, Lonsway, & Fitzgerald, 1999; Yeater & O'Donohue, 1999). Much of the research with this population is descriptive and does not include independent variable manipulations, especially those variables that might "improve" the behaviors of concern (Lonsway, 1996; Schewe & O'Donohue, 1993).

Because it is neither ethical nor practical to observe date rape behaviors in a naturalistic setting, self-report measures are often collected in date rape research. However, many studies use self-report measures as their primary dependent measures. Although they have high external validity, they are of limited internal validity because of bias in recall and reactivity (Abbey, et al., 2002). It was recommended that changes in dependent measures be assessed by behavior that is either theoretically or empirically related to a decreased risk of sexual victimization (Yeater & O'Donohue, 1999).

A major problem that hinders future prevention research is a lack of information on what causes sexual assault (Yeater & O'Donohue, 1999). Because no single factor has been demonstrated to cause sexual assault, future prevention efforts are limited. It has been suggested that future research investigate personological and situational variables that contribute to sexual assault, assess causal models, and investigate correlates of sexual assault (Yeater & O'Donohue, 1999).

Further research is needed on why perpetrators sexually aggress in order to develop successful prevention programs. Progress in understanding the causes of sexual assault is hindered by "competing theoretical and methodological approaches to this complex behavior (Barbaree & Marshall, 1991), making the integration of

these and other variables into a more comprehensive model difficult" (Bernat, et. al., 1999, p. 148). To achieve this, the first strategy is to investigate the variables controlling the perpetrator's behavior and to conduct theoretically and technically sound research to decrease the incidence of sexual aggression. It is only by investigating the causes of perpetration of sexual violence can true sexual assault prevention successfully occur.