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I, Heidi L. Scherer , hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Criminal Justice.

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Disability Status and Victimization Risk Among a National Sample of College Students: A Lifestyles-Routine Activities Approach

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Disability Status and Victimization Risk Among a National Sample of College Students: A Lifestyles-Routine Activities Approach

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by

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ABSTRACT

Over the past decade, several authors have conducted studies on samples of college students to gain a greater understanding of victimization among this population. This body of research has demonstrated that in comparison to the general public, college students are more likely to report having experienced sexual and stalking victimization. At the same that this research was being carried out, a related but independent body of research began exploring victimization among another high risk population, individuals with disabilities. This exploration produced evidence that individuals with disabilities appear to be at an increased risk of victimization when compared to their counterparts without disabilities. The purpose of this dissertation is to bridge the gap in these two bodies of research by examining the relationship between disability status and sexual and stalking victimization among a national-level sample of college students. This study extends upon past research by: 1) estimating multivariate models that control for known risk factors of victimization derived from the lifestyles-routine activities framework, 2) utilizing multiple operationalizations of disability, and 3) examining various types of victimization. Bivariate results demonstrate that there was a significantly larger proportion of sexual and stalking victims among students with disabilities in comparison to students without disabilities. Multivariate results indicate that disability status is a significant predictor of sexual and stalking victimization even after controlling for risk factors of victimization among college students. In each of the estimated models, students with disabilities were significantly more likely to report having been victimized. On average, individuals with mental disabilities or multiple types of disabilities experienced the greatest likelihood of sexual and stalking victimization. Implications for future research and prevention/policy are explored.

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Chapter 1

VICTIMIZATION AMONG COLLEGE STUDENTS

The U.S. Department of Education (2009) estimates that approximately 20 million individuals will be attending colleges and universities in the United States by the year 2012. For a significant proportion of these individuals, college enrollment signifies a key transition point in their development from adolescence into young adulthood. Although tenure at college is a time of great independence and intellectual exploration, research demonstrates that it is also a time when students experience an increased risk of sexual and stalking victimization (Koss, Gidycz, and Wisniewski, 1987; Fisher, Sloan, Cullen, and Lu, 1998, Fisher, Cullen, and Turner, 1999, 2002; Mustaine and Tewksbury, 1999; 2002; Mohler-Kuo, Dowdall, Koss, and Wechsler, 2004; Baum and Klaus, 2005; Cass, 2007; Jordan, Wilcox, and Pritchard, 2007; Kilpatrick, Resnick, Ruggiero, Conoscenti, and McCauley, 2007; Krebs, Lindquist, Warner, Fisher, and Martin, 2009; American College Health Association, 2010; Core Institute, 2010). One way that researchers have attempted to better understand why college students experience an increased victimization risk is through the lifestyles-routine activities framework. This framework, which is derived from Hindelang, Gottfredson, and Garofalo's (1978) lifestyle-exposure theory and Cohen and Felson's (1979) routine activities theory, is based on the premise that an individual's risk of victimization is greatly influenced by their daily routines and lifestyle characteristics.

Lifestyles-routine activities theory provides a useful framework for examining victimization among this population because college students are known to have lifestyles and routine behaviors that significantly shape their opportunity for victimization. For instance, many college students partake in risky behaviors such as the consumption of alcohol and recreational drugs and experiment with dating and sexual experiences. Furthermore, college enrollment also

signifies a time where students have a large amount of autonomy and experience much exposure to new situations and people. Drawing from the lifestyles-routine activities theory, several authors have conducted tests of the framework on samples of college students. These studies provide evidence that the everyday and routine behaviors of college students, such as alcohol consumption, dating, and participating in school activities, play a significant role in influencing risk of sexual and stalking victimization among this population (Clodfelter, Turner, Hartman, and Kuhns, 2010; Fisher et al., 1999, 2002; Mustaine and Tewksbury, 1999, 2002; Schwartz and Pitts, 1995).

Although researchers have examined a wide-range of risk factors for victimization among college students, no published studies have specifically examined the role that disability status has on influencing a student's likelihood of being a victim. This gap in the research is problematic for two reasons. First, college students with disabilities comprise a significant proportion of the typical student body (Henderson, 2001; U.S. Governmental Accounting Office, 2009). Second, past research suggests that individuals with disabilities experience an elevated risk of victimization compared to individuals without disabilities (see Rand and Harrell, 2009, Brownridge, 2006; Martin et al., 2006; Brownlie, Jabbar, Beitchman, and Atkinson, 2007). Based on past victimization research of college students and individuals with disabilities, there is reason to believe that college students with disabilities may experience an increased likelihood of victimization because they are members of two high-risk populations. Despite the fact that several studies have estimated the prevalence of victimization among individuals with disabilities, very few studies have examined the effect that disability has on victimization risk while controlling for alternative risk factors related to victimization (e.g., measures derived from the lifestyles-routine activities framework). Due to this limitation, very little is known about

whether a college student's disability status plays a role in influencing victimization risk net of lifestyle and routine behaviors.

The purpose of this dissertation is to bridge the gap in these two bodies of research by examining the relationship between disability status and sexual and stalking victimization among a national-level sample of college students. Drawing from past research that has demonstrated that the lifestyles-routine activities framework can help account for risk among college students, and the research indicating that individuals with disabilities experience an increased risk of victimization, this study examines the interplay between college students' disability status, lifestyle characteristics and routine activities, and risk for sexual and stalking victimization. This dissertation fills the void in existing research by utilizing refined measures of exposure to offenders, proximity to offenders, target attractiveness, and guardianship from the lifestyles-routine activities framework. Establishing if there is a relationship between disability status and victimization risk among college students can help to inform both policy and prevention on college and university campuses and hopefully reduce risk of victimization among this population.

THE EXTENT OF VICTIMIZATION AMONG COLLEGE STUDENTS

Prior to the 1980's, there was a general belief among the public that college campuses were safe, insulated environments with a relatively low risk of victimization. However, this perception started to change after several high-profile crimes on US college campuses, including the widely publicized murder of Jeanne Clery (see Sloan and Fisher, 2011). In 1986, Clery was raped and murdered in her dorm room after her attacker entered an open door at her Leah University dormitory (Fisher, Daigle, and Cullen, 2010). Prompted by knowledge that Leigh University failed to notify students of past violent crimes on the campus, Jeanne's parents,

Howard and Connie Clery lobbied for legislation to improve disclosure of college and university campus crime statistics. This resulted in the subsequent passing of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act in 1990. The Clery Act requires that all universities and colleges that are eligible for federal financial aid programs to record and distribute statistics on crimes that occur on or near the university or college (Fisher et al., 2010; Sloan and Fisher, 2011). The Clery Act has ultimately played a very important role in bringing the issue of campus crime and victimization into the limelight and to the attention of the public, researchers, and policymakers.

Following passage of the Cleary Act, the federal government began to investigate victimization among college students and support research on the topic by sponsoring grants for large-scale, national studies on college students and developing public-use databases with campus crime statistics (e.g., The Campus Safety and Security Data Analysis Cutting Tool). This closer inspection uncovered the finding that university and college campuses were not the crime-free environments that were once assumed and that although college students experience a lower risk of violent victimization when compared to their non-college counterparts (Baum and Klaus, 2005), a significant proportion of college students reported being a victim of a crime during the course of their tenure at school. Over approximately the last two decades, much research has focused on estimating the prevalence of victimization among college students in an effort to learn more about the nature and extent of victimization among this population (Koss et al., 1987; Fisher et al., 1998; 1999; Mustaine and Tewksbury, 1999; 2002; Mohler-Kuo et al., 2004; Baum and Klaus, 2005; Cass, 2007; Jordan et al., 2007; Kilpatrick et al., 2007; Krebs et al., 2009; American College Health Association, 2010; Core Institute, 2010). These studies, which utilize a wide-range of student samples, help to demonstrate that victimization is experienced by a notable proportion of college students. Specifically, this body of research

provides evidence that college students are at risk of experiencing both sexual and stalking victimizations.

The Extent of Sexual Victimization Among College Students

The first national-level, large-scale study on sexual victimization among college students was conducted by Koss and her colleagues in the late 1980's. Koss et al. (1987) sampled over 3,000 women from 32 post-secondary institutions in the United States in an effort to identify the scope of rape among this population. Using the Sexual Experiences Survey (SES), a 10-item, behaviorally-specific survey designed to measure the extent of rape by physical force as well as intentional intoxication, Koss et al. (1987) found that approximately 16% of the sample experienced an attempted or completed rape within a 12-month period. Although this number has been highly debated as being inflated as the result of survey questions that were considered overly broad in the type of sexual behavior that was characterized as rape (see Gilbert, 1997 for full discussion of the debate), this study played a key role in demonstrating that sexual victimization among college women, particularly date rape, was not as rare of a phenomenon as the public or researchers once assumed. Koss and her colleagues' research helped to lay the groundwork for future studies on sexual victimization among college students, and their inclusion of intentional intoxication in their operationalization of rape played a valuable role in shaping research on drug- and alcohol-facilitated rapes (Kilpatrick et al., 2007; Krebs et al., 2009).

It was not until the mid to late 1990's before other national-level studies on sexual victimization among college students were conducted that could provide comparisons to the results from the SES survey. Table 1.1 provides the prevalence estimates, sample sizes, reference periods, and operationalization of sexual victimization from studies on nationally-

Table 1.1: Extent of Victimization from Studies Utilizing National and Large-Scale Samples of College Students

Author(s) (Date Published)	N of students (N of institutions)	Reference Period	Victimization Prevalence Estimates (%)			Operationalization of Victimization
			Sexual Assault	Rape	Stalking	
National-Level Studies						
Koss et al. (1987)	3,187 (32)[1]	12 months		16.6		Attempted intercourse by physical force or intentional intoxication; Completed intercourse by physical force, intentional intoxication, and forcible anal or oral penetration
Fisher et al. (1998)	3,472 (12)	6-9 months	2.2	0.8		Sexual Assault: attacks or attempted attacks involving unwanted sexual contact Rape: attempted or completed forced vaginal, anal, or oral penetration by the offender or a foreign object
Fisher et al. (1999)[1]	4,446 (233)[1]	≈7 months	15.5	2.8	13.1	Sexual Assault: completed and attempted rape; completed and attempted sexual contact with force; threat of rape; threat of contact with force; completed and attempted sexual coercion; completed and attempted sexual contact without force; threat of penetration without force; and threat of contact without force Rape: completed or attempted forced vaginal, anal, or oral penetration by the offender or a foreign object Stalking: repeated following; waiting outside a classroom, residence, workplace, or other building or car; watching; telephoning; writing letters, cards, etc; electronic mailing; communicating with the respondent in other ways that seem obsessive and made the respondent afraid or concerned for her safety

Table 1.1 (continued)

Mohler-Kuo et al. (2004)	23,980 (119) [1&2]	≈6 months		4.7		Forced sexual intercourse; sexual intercourse as a result of being threatened with harm; nonconsensual sexual intercourse as a result of intoxication
Baum and Klaus (2005)	36,881 (NA)	6 months		0.4		Attempted or completed forced vaginal, anal, or oral penetration by the offender or a foreign object
Cass (2007)	3,036 (11)	6-9 months	3.7			Forced or coerced unwanted sexual acts
Kilpatrick et al. (2007)	2,000 (253)[1]	7 months		3.0		Nonconsensual, unwanted oral, anal, or vaginal penetration due to voluntary or involuntary drug consumption; forced vaginal, anal, or oral penetration
American College Health Association (2010)	95,712 (139)	12 months	6.0	3.8	6.6	Sexual Assault: sexual touch without consent Rape: attempted or completed sexual penetration (vaginal, oral, anal) without consent Stalking: e.g., waiting for respondent outside of a classroom, residence, or office; repeated emails/phone calls
Core Institute (2010)	77,481 (NA)	12 months	4.6	2.8		Sexual Assault: forced sexual touching or fondling Rape: unwanted sexual intercourse
Large-Scale Studies						
Mustaine and Tewksbury (1999)	861 (9)[1]	6 months			10.5	Self-defined; Respondents were asked whether they had been a victim of behavior they would define as stalking

Table 1.1 (continued)

Mustaine and Tewksbury (2002)	674 (12)[1]	6 months	10.8		Unwanted anal, oral, or vaginal intercourse without force; forced vaginal, anal, or oral penetration; Sexual encounter where the respondent felt sexually taken advantage of
Jordan et al. (2007)	1,010 (1)[1]	12 months		11.3	Someone spying on respondent; someone standing outside home, school, or workplace; unsolicited letters, emails, or other correspondence; unsolicited phone calls; vandalism of personal property or something respondent loved; someone showing up at places without business there; someone leaving unwanted items for the respondent to find; someone trying to communicate against the respondent's will
Krebs et al. (2009)	5,446 (2)[1]	During College	2.5		Unwanted touching of a sexual nature, oral sex, vaginal and anal intercourse, and sexual penetration with a finger or object due to physical force or incapacitation

[1] Sample consists of only females.
[2] Sample consists of three waves of data: 1997, 1999, and 2001.

representative and large-scale samples of college students. On average, these studies report that a much smaller, yet still notable, proportion of college students reported experiencing a rape victimization than what was estimated from Koss et al.'s SES survey (Fisher et al., 1998; Fisher et al., 1999; Mohler-Kuo et al, 2004; Blaum and Klaus, 2005; Kilpatrick et al., 2007; American College Health Association, 2010; Core Institute, 2010). However, sexual assault, a more comprehensive measure of sexual victimization which includes acts such as unwanted sexual touching, unwanted sexual acts, and threats of sexual contact with force, was experienced on average by a much larger proportion of college students (Fisher et al., 1998; Fisher et al., 1999; Mustaine and Tewksbury, 2002; Cass, 2007; Krebs et al., 2009; American College Health Association, 2010; Core Institute, 2010).

One of the first studies that examined victimization among college students was Fisher et al.'s (1998) analysis of approximately 3,500 male and female college students from 12 post-secondary institutions across the U.S. Using survey questions that were designed after the National Crime Victimization Survey, Fisher et al. (1998) report that completed or attempted rapes were experienced by less than 1% of the sample. However, a slightly higher percent of students (2.2) reported experiencing a sexual assault victimization, which included unwanted sexual contact, since the beginning of the school year. In addition to these results, another large, national-level study by Fisher and her colleagues (1999) sheds light on the extent of sexual victimization among college students. Their survey, the National College Women Sexual Victimization (NCWSV) survey, was administered to over 4,000 college women in over 200 post-secondary institutions in the U.S. Utilizing a survey instrument designed after the NCVS, Fisher et al. (1999) found that approximately 3% of female college students had been a victim of a rape between the beginning of the school year and the time the survey was administered (i.e., approximately 7 months). Additionally, Fisher et al. (1999) present evidence that over 15% of

the sample reported experiencing a sexual assault, which included a wide-range of sexual victimizations such as rape, unwanted sexual contact, sexual coercion, and threats of sexual contact or penetration.

In addition to Fisher et al.'s (1999) analysis, Mustaine and Tewksbury's (2002) study of 674 college women from 12 southern colleges and universities also provides evidence that sexual assault victimization is experienced by a significant proportion of female coeds. Mustaine and Tewksbury's (2002) analysis examined two different types of sexual victimization, general sexual assault and serious sexual assault. General sexual assault was measured by a 12-item scale that included behaviors ranging from less serious acts such as being pressured into dates and being forced to kiss someone, to more serious acts such as forced anal, oral, or vaginal intercourse. Based on this operationalization, Mustaine and Tewksbury (2002) report that 26% of the college women in the sample experienced at least one of the 12 items that comprised general sexual assault. In contrast to the general sexual assault measure, serious sexual assault included only acts from the 12-item scale that involved threats or force. According to Mustaine and Tewksbury (2002), approximately 11% of the respondents reported being a victim of this narrower, but more serious type of sexual assault.

Mohler-Kuo et al.'s (2004) study of the Harvard School of Public Health College Alcohol Study (CAS) also helps to demonstrate the extent of sexual victimization among female college students. Their analysis included the 1997, 1999, and 2000 waves of the CAS data which comprised a total sample size of approximately 24,000 students from 119 post-secondary institutions in the U.S. The CAS survey asked respondents about three forms of rape victimization: forced intercourse, intercourse as the result of being threatened with harm, and nonconsensual intercourse due to intoxication. Mohler-Kuo et al. (2004) report that approximately 5% of the respondents were a victim of at least one of the three forms of sexual

victimization. They also found that there were differences in the percent of college students who reported being a victim of the different forms of rape. For instance, 3.4% of the sample reported being raped while intoxicated, while a smaller percent (1.9) experienced a forced rape, and less than 1% (.4) experienced a rape due to the perpetrator threatening the victim with harm.

In contrast to some of the prior estimates, particularly Koss et al.'s (1987) and Mustaine and Tewksbury's (2002), results from the National Crime Victimization Survey do not indicate that sexual victimization is experienced by a significant proportion of college students. Baum and Klaus's (2005) analysis of approximately 37,000 college students aged 18-24 who partook in the NCVS between 1995 and 2002 found that rape/sexual assault was reported on average by only .4% of the respondents. However, it is important to note that this result could be due to the limitations of the NCVS to measure rape (see Fisher et al., 2010). On the other hand, from her reanalysis of Fisher et al.'s (1998) data which utilized questions designed after the NCVS, Cass (2007) found that approximately 4% of the respondents reported experiencing some type of forced or coerced unwanted sexual act. However it is important to note that Cass (2007) operationalized sexual assault based on screening questions and not incident reports like Baum and Klaus (2005), which could account for the higher rate in Cass's (2007) analysis.

Kilpatrick and his colleagues' (2007) national-level study of 2,000 college women from 253 post-secondary institutions also sheds light on the extent of rape victimization among female students. Using a survey with behaviorally-specific questions designed after the National Women's Study (Kilpatrick et al., 1992) and the National Violence Against Women Survey (Tjaden and Theoennes, 2000), Kilpatrick et al. asked respondents about their experience with three different forms of rape: drug-facilitated rape, incapacitated rape, and forcible rape. From their analysis, they report that approximately 3% of the women reported experiencing any form of rape within a 7-month period. Similar to Mohler-Kuo et al. (2004), they found that there were

differences in the percent of victims who experienced the different forms of rape. For instance, 1.9% of the respondents reported a forcible rape, while 1.2% reported an incapacitated rape (i.e., victim voluntarily consumes a substance), and almost 1% (.09) reported a drug- or alcohol-facilitated rape (i.e., perpetrator involuntarily gives the victim a substance). Along with the results from the SES and CAS studies, Kilpatrick et al.'s (2007) study helps to provide estimates of the extent of sexual victimization that occurs not just as a result of physical force, but also from substance use and the incapacitation of the victim.

Krebs and his colleagues' (2009) Campus Sexual Assault Study is another large-scale study that examines the extent of sexual victimization among college women in the United States. They administered their survey to approximately 5,500 undergraduate female students from two large, public universities and asked the respondents about their sexual victimization experiences since they entered college. Based on their analysis, Krebs et al. (2009) found that 2.5% of the respondents reported experiencing a sexual assault victimization that involved only the use of physical force by the perpetrator. They also report that approximately 9% of the respondents experienced a sexual assault since they enrolled in school that involved non-consent due to incapacitation only. Furthermore, Krebs and his colleagues' (2009) found that 2.2% of the female students in the sample experienced sexual assault that involved both physical force by the offender and incapacitation due to drugs and alcohol during their tenure at college.

There are also two annual surveys administered to national samples of college students that help to shed light on the extent of sexual victimization among this population. One of the largest national-level studies on college students and their victimization experiences is conducted biannually by the American College Health Association (see Chapter 3 for a detailed discussion of the ACHA data). Results from the Spring 2010 wave of these data, which is comprised of almost 96,000 students from 139 post-secondary institutions in the U.S., indicate that 6% of the

respondents reported experiencing a sexual assault victimization that was defined as being sexually touched without consent (ACHA, 2010). In addition, ACHA reports that approximately 4% of the respondents experienced an attempted or completed rape. The Core Alcohol and Drug Survey administered by Southern Illinois University Carbondale's Core Institute is another large-scale survey of college students that sheds light on the extent of sexual victimization among this population. Based on the 2008 wave of these data, which was comprised of over 77,000 students in two- and four-year institutions, the Core Institute (2010) reports that almost 5% of the respondents experienced a sexual assault in the form of forced sexual touching or fondling. Similar to the estimates from past studies, the Core Institute (2010) found that approximately 3% of the students in the sample reported being a victim of a rape.

Summary of Sexual Victimization Research

In sum, the estimates from these large-scale and national-level studies of college students vary significantly in their estimates for rape and sexual assault victimization, ranging widely from .4% to 16.6% for rape and 2.2% to 15.5% for sexual assault. However, although the estimates differ significantly across the studies due to such factors as the operationalization of rape and sexual assault, the sampling design and composition, reference periods, and the design of survey questions, there are key findings that emerge from the studies. The first key finding to emerge is that the majority of the studies found that between 3% and 5% of the respondents reported experiencing a rape victimization, which was commonly defined as forced anal, oral, or vaginal penetration. For instance, only three out of the eight studies on rape victimization did not produce estimates that fall within, or even close to, this range. These studies include Koss et al., (1987), Fisher et al. (1998), and Baum and Klaus (2005) who report rape estimates of 16.6%, .8%, and .4% respectively. Given the similarity in reference periods between these studies and

those that produced estimates within the 3 to 5% range, the differences in rates do not appear to be solely the result of the time frame for victimization.

The second key finding from the studies is that college students appear to experience an increased risk of sexual victimization when compared to other populations (see Kilpatrick et al., 2007 for detailed discussion). For instance, Kilpatrick et al. (2007) report that when compared to a general sample of women in the United States, there was a greater proportion of rape victims among the sample of college women. They found that while less than 1% (.6) of women in the general public reported a rape victimization within the 7-month reference period, almost 3% of the respondents from the college sample experienced a rape. Although none of the studies conducted a similar comparison among male students and men in the general public, there is evidence to demonstrate that male students may also experience an increased risk of sexual victimization. For instance, the American College Health Association (2010) reports that 1.5% of male student respondents reported experiencing either an attempted or completed rape within a 12-month period. However, Tjaden and Thoennes's (1998) analysis of 8,000 male respondents from the National Violence Against Women Survey, found that only .1% of the respondents reported experiencing a rape victimization during a 12-month period prior to the administration of the survey. Taken as a whole, there appears to be empirical evidence that both male and female college students experience a higher risk of rape victimization when compared to the general population of adults in the U.S.

The third key finding from the studies is that a notable proportion of college students, including both males and females, experience a sexual assault victimization while enrolled in college. Similar to rape victimization, the prevalence estimates for sexual assault victimization vary widely based on the wording of survey questions and the operationalization of sexual assault, particularly the number or seriousness of acts defined by the researchers to constitute

sexual assault. For instance the seven studies that examined sexual assault victimization among college students produced estimates ranging from 2.2% to 15.5%, or even as high as 26.3% if Mustaine and Tewksbury's (2002) general sexual assault measure is included. In general, as would be expected, larger percentages were observed in studies that defined sexual assault more broadly (see Table 1.1 for the operationalization of sexual assault for each study). However, despite these differences, the results from the studies provide support that college students are at risk of experiencing a wide-range of sexual victimizations including threats of forced sexual contact, sexual coercion, and unwanted sexual contact and touching.

Taken together, the results from the 11 national-level and large-scale studies of sexual assault and rape victimization among college students demonstrate that a significant proportion of college students report being a victim of a sexual offense while they are enrolled in college. In particular, the finding that college students are more likely to report a victimization than individuals in the general public aged 18 years and older, may speak directly to the fact that college students have specific lifestyle characteristics and routine behaviors that influence their likelihood of being a victim.

The Extent of Stalking Victimization Among College Students

Similar to results from sexual victimization studies, there is also evidence that a significant proportion of college students experience a stalking victimization during their college tenure (Fisher et al., 1999; Mustaine and Tewksbury, 1999; Jordan et al., 2007; American College Health Association, 2010). Although the research on this topic is less extensive than what has been conducted for sexual victimization, the studies that have examined stalking among college students provide a great deal of insights into the nature and extent of the victimization within this population. The first large-scale study to examine the prevalence of stalking

victimization in the United States is Tjaden and Thoennes's (1998) National Violence Against Women Study. Based on their national sample of 8,000 males and 8,000 females aged 18 and older, Tjaden and Thoennes report that 8% of women and 2% of males reported experiencing a stalking victimization during their lifetime. Furthermore, they found that when stalking was defined more broadly to include events with lower thresholds of fear, the prevalence increased to 12% and 4% respectively.

Although the NVAWS was not conducted specifically on a sample of college students, Tjaden and Thoennes found evidence that younger adults were more likely to report being a victim of stalking than other age groups. For instance, although 18 to 29 year olds only comprised about 20% of the total sample, they accounted for 52% of all stalking victims (Tjaden and Thoennes, 1998). Drawing from this finding and past evidence that college students experience an increased risk to a wide-range of victimizations, several researchers have examined stalking prevalence among college students in an effort to gain a greater understanding of the extent of the problem within this population (Fisher et al., 1999; Mustaine and Tewksbury, 1999; Jordan et al., 2007; American College Health Association, 2010). Collectively, these studies provide evidence that a sizable number of college students report stalking victimizations while enrolled in college. Table 1.1 provides the prevalence estimates, sample sizes, reference periods, and operationalization of stalking victimization from four studies on nationally-representative and large-scale samples of college students.

Fisher et al.'s (1999) National College Women Sexual Victimization (NCWSV) survey was the first national-level study that estimated the prevalence of stalking victimization among college women. Using a survey instrument designed after the NCVS, NWAWS, and state and federal legislation, Fisher et al. (1999) asked 4,446 female college students from 233 post-secondary institutions about their stalking victimization experiences. Based on their analysis,

they found that approximately 13% of the respondents reporting experiencing a stalking victimization, which they defined as some form of repeated pursuit behavior that caused the respondent to feel afraid or concerned for her safety. An important aspect of this study is that the authors utilized behaviorally-specific survey questions to determine whether or not a respondent met the criteria for experiencing a stalking victimization. For instance, instead of asking the respondents if they had been stalked, Fisher et al. (1999) asked such questions as whether the women were repeatedly followed, if someone repeatedly waited for them outside their residence, school, or workplace, or if they were repeatedly contacted in any way that made them fearful.

Another study on stalking prevalence among college women was conducted by Mustaine and Tewksbury (1999). However, in contrast to Fisher et al.'s (1999) study, Mustaine and Tewksbury (1999) employed a self-defined stalking survey question that asked respondents whether they had been a victim of behavior they would define as stalking. This methodological approach differs greatly from Fisher et al.'s (1999) because they did not include two key aspects of stalking in their definition, pursuit behavior and fear by the victim. Furthermore, because respondents self-defined stalking, there is no way to determine if the reported behavior would meet the criteria for stalking set by laws or past research. However, this study is still valuable for shedding light on the extent of stalking among college women. Utilizing their broader operationalization of stalking, Mustaine and Tewksbury's (1999) analysis of 861 female college students from 9 post-secondary institutions found that 10.5% of the sample reporting being a victim of an act that they defined as stalking within a 6-month period. Despite great differences in the wording of the stalking victimization questions, Mustaine and Tewksbury's (1999) prevalence estimates are actually quite comparable to those reported by Fisher et al.'s NCWSV.

Jordan et al.'s (2007) analysis of 1,010 female undergraduate and graduate students from a large southeastern public university also sheds light on the extent of stalking victimization

among college students. Similar to the NCWSV instrument, Jordan et al. (2007) utilized behaviorally-specific survey questions that asked respondents if they experienced a wide-range of behaviors such as being spied on, having someone stand outside the respondent's home, school, or workplace, or receiving unsolicited correspondence or items. Based on this operationalization of stalking, they report that 18% of the respondents experienced a stalking victimization during their enrollment at the university and approximately 11% reported a being a victim within a 12-month period. Highlighting the fact that individuals may not always recognize when they have been a victim of stalking, Jordan et al. (2007) report that only 42% of the respondents who met the criteria for stalking victimization acknowledged the behavior as stalking. Another key finding from their analysis is that stalking victimization appeared to be co-occurring with other victimization types such as sexual and physical assault. For instance, Jordan et al. (2007) report that approximately 75% of the victims reported experiencing another type of victimization alongside the stalking.

One of the largest national-level studies that estimates the prevalence of stalking victimization among college students is the National College Health Assessment II (NCHA-II) survey administered by the American College Health Association (ACHA). The ACHA (2010) survey question differs slightly from past research because its stalking definition includes elements that are both self-defined and behaviorally specific. For instance, ACHA (2010) asks respondents "within the last 12 months: were you a victim of stalking (e.g., waiting for you outside the classroom, residence, or office; repeated emails/phone calls)?" Based on this operationalization of stalking, ACHA (2010) reports that approximately 7% of the 95,712 students surveyed experienced a stalking victimization within the 12-month reference period. An important contribution of this study is that the sample includes both male and female college students. When stalking victimization was broken down by sex, ACHA (2010) found that 8% of

the female respondents and 4% of the male respondents reported being a victim of a stalking victimization.

Summary of Stalking Victimization Research

Although research on stalking victimization among college students is not as vast as that for other types of victimization, in sum, the results from these four studies on college students demonstrate that stalking victimization is experienced by a significant proportion of both female and male students. Despite the fact that the studies each differed in terms of the sample, operationalization of stalking, reference periods, and the wording of survey questions, a fairly clear pattern emerges across the studies that indicates that approximately 10% of female college students report being a victim of a stalking victimization between a 6- and 12-month reference period; with prevalence estimates ranging from ACHA's (2010) 8% to Fisher et al.'s (1999) 13%. In addition, there is some empirical evidence that a notable amount of male college students also experience stalking victimization. For instance, ACHA (2010) reports that 4% of all male respondents reported being a victim of stalking. Given the fact that ACHA's estimate for the prevalence of stalking among female students is slightly lower than the percentages from past research, it is possible that the male prevalence is also underestimated and that a greater proportion of men in college experience stalking victimization.

In addition to providing evidence that a noteworthy proportion of college students experience a stalking victimization, the studies also demonstrate that in comparison to other populations, college students are at an increased risk of being a victim of stalking. For instance, results from Tjaden and Thoennes's (1998) NVAWS survey indicate that approximately 1% of women aged 18 and older in the U.S. reported a stalking victimization within a 12-month period. In contrast to this finding, each of the estimates from the studies on college women reported

higher stalking prevalence than what was observed in the NVAWS despite having the same or even shorter reference periods. This same pattern appears to exist for male college students as well. For instance, Tjaden and Thoennes (1998) found that only .4% of the 8,000 men surveyed experienced a stalking victimization within a 12-month period. However, ACHA (2010) reports a one-year stalking prevalence estimate (4%) among males that is 10x larger than the estimate from the NVAWS. In sum, the differences between the results from the NVAWS and the studies on college students demonstrate that college students, both males and females, appear to experience an increased likelihood of experiencing a stalking victimization than the general population.

Taken together, the findings from the national-level and large-scale studies on college students provide evidence that sexual violence and stalking victimizations among college students are not rare phenomena and that a significant proportion of college students experience a victimization while enrolled in college. These findings have led researchers to conclude that there must be something particular about the college students' lifestyle or individual characteristics that play a role in influencing their risk and accounting for this heightened likelihood of victimization. Drawing from this assumption, one way that researchers have attempted to gain a greater understanding of victimization among college students is through the lifestyles-routine activities framework. This framework, which is based on Hindelang et al.'s (1978) lifestyle-exposure theory and Cohen and Felson's (1979) routine activities theory, views victimization as a result of an individual's lifestyle characteristics and routine behaviors. This framework has played a very crucial role in shaping research on college students and identifying the factors that influence their victimization and explain their heightened risk. The lifestyles-routine activities framework and its extensions are discussed below.

THE LIFESTYLES-ROUTINE ACTIVITIES FRAMEWORK

The lifestyles-routine activities framework is one of the most widely-cited and tested theories that has been applied by victimologists and criminologists to the examination of victimization risk (see Sampson, 1987; Sampson and Wooldredge, 1987; Massey, Krohn, and Bonati, 1989; Kennedy and Forde, 1990, Lynch and Cantor, 1992; Rountree and Land, 1996, Tseloni and Farrell, 2002). This framework was developed out of the unification of Hindelang et al.'s (1978) lifestyle-exposure theory and Cohen and Felson's (1979) routine activities theory. Each of these theories is based on the premise that crime is non-randomly distributed and the characteristics and behaviors of crime targets greatly influence their likelihood of being victimized. In particular, both of these theories fall under the umbrella of opportunity theories because they share the assumption that a victimization can only occur if certain elements come together in time and space such as a motivated offender and an attractive, unguarded crime target (Cohen and Felson, 1979).

Due to these similarities and shared assumptions, lifestyle-exposure theory and routine activities theory have been combined together to form the lifestyles-routine activities framework. Since the development of the theories in the late 1970's, and further extensions from the 1980's to the present day, this framework has played a vital role in guiding research on victimology and illuminating the factors that influence a crime target's risk of victimization (Cohen, Kluegel, and Land, 1981; Finkelhor and Asdigian, 1996; Schreck, 1999). This section will provide a discussion of this theoretical framework as well as theoretical extensions that are relevant to understanding victimization among both college students and individuals with disabilities.

Lifestyle-Exposure Theory

In 1978, Hindelang and his colleagues published their book, *Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization,* in which they presented their lifestyle-exposure theory. The authors contend that the purpose of the book was to develop a theoretical model that could account for findings from victimization data and be utilized to understand an individual's risk of personal victimization. The development of their theory was based on results from the 1972-1974 National Crime Survey (NCS). Based on their analysis of the NCS data, Hindelang et al. (1978) report that victimization risk was not distributed evenly across demographic groups and that certain individual and demographic characteristics, such as age, sex, and race, influenced the likelihood that someone would report a victimization. For instance, they report that males were more likely than females to be a victim of personal crime while younger individuals were also more likely to experience a victimization than older individuals. These findings led Hindelang et al. (1978) to conclude that an individual's lifestyle characteristics play an important role in influencing whether or not he/she will be a victim of a crime. According to the authors, variations in a person's lifestyle can account for the differences in victimization risk observed in the NCS across the various demographic groups.

According Hindelang and his colleagues (1978), lifestyle refers to an individual's daily routine activities that include both leisure activities (e.g., going to movies, dining out) and vocational activities (e.g., work, school). Based on their theory, an individual's demographic characteristics (e.g., age, sex, race, income, marital status, education, occupation) play a large role in shaping lifestyle. Take for instance, marital status. Hindelang et al. (1978) contend that marital status can greatly influences an individual's lifestyle characteristics because those who are married are more likely to partake in leisure activities that center around the home environment, while single individuals are more likely to spend their leisure time in public places.

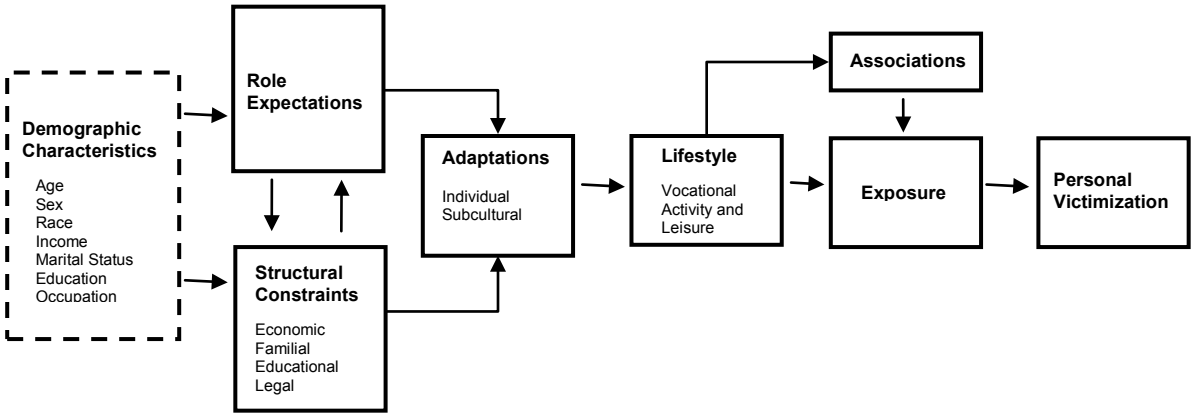
Differences in lifestyle characteristics can also be easily observed across age groups. For instance, younger adults are likely to have lifestyle characteristics quite dissimilar from elderly individuals because young people tend to spend more time in public places with peers while older people are more likely to spend time at home with family members.

According to Hindelang et al. (1978), lifestyle is a key theoretical concept from their theoretical model because it has a direct relationship with exposure to motivated offenders (see Figure 1.1 for a diagram of their theoretical model). For instance, they contend that variations in lifestyle characteristics and daily activities result in variations in exposure to motivated offenders and in turn, victimization risk. Based on the previous example of differences in lifestyles between younger and older individuals, as well as findings from the NCS, Hindelang et al. (1978) posit that the reason that younger individuals report higher levels of victimization is because when compared to older individuals they are more likely to partake in routine behaviors that expose them to potential offenders during the time periods where victimizations are most likely to occur (e.g., patronizing bars, dance clubs, and entertainment establishments at night). That is, younger individuals are more likely to be victims because their lifestyles differentially expose them to potential motivated offenders. Hindelang et al. (1978) contend that individuals who spend less time at home, more time in public places, and more time with nonfamily members (e.g., males, young people, single individuals) will all more likely to be exposed to motivated offenders and experience a greater risk of victimization than those with lifestyles more centered towards their home and family (e.g., women, the elderly, married individuals, and those with children).

Although Hindelang et al.'s (1978) theory posits that demographic characteristics can greatly shape an individual's lifestyle and victimization risk, the authors do not predict that there is a direct relationship between demographic characteristics and lifestyle. Instead, they contend

that lifestyle is a product of role expectations, structural constraints, and the adaptations that individuals make to these two elements. Role expectations refer "to cultural norms that are associated with achieved and ascribed statuses of individuals and that define preferred and anticipated behaviors" (Hindelang et al., 1978; 242). That is, they are particular behaviors that society views as appropriate for individuals based on their demographic characteristics (e.g., married individuals are expected to spend time at home with their spouses). In turn, Hindelang et al. (1978) contend that role expectations can shape an individual's lifestyle. For instance, if there is the shared belief in society (i.e., a role expectation) that women should not be members of the workforce, it is likely that their lifestyles will in turn reflect this expectation (e.g., they will adopt daily activities which are centered more in the home environment). It is important to note that while Hindelang et al. (1978) posit that demographic characteristics influence and shape role expectations, they do not predict that the relationship between the two is causal (e.g., the dashed line in their theoretical model signifies a non-causal relationship).

Figure 1.1: Hindelang et al. (1978) Theoretical Model



Source: Hindelang et al. (1978)

In addition to role expectations, Hindelang et al. (1978) posit that structural constraints are also an important antecedent to lifestyle. According to the authors, structural constraints refer to "limitations on behavioral options that result from the particular arrangements existing within various institutional orders, such as the economic, familial, educational, and legal orders" (Hindelang et al., 1978; 242). This concept recognizes that individual behavior may be constrained by a wide-range of environmental factors, and that such constraints can in turn influence a person's lifestyle. For instance, educational constraints and school attendance requirements greatly limit the behavior of school-aged children and adolescents. Similar to role expectations, Hindelang et al. (1978) acknowledge that demographic characteristics have an influential, but not causal, effect on structural constraints. In addition, lifestyle-exposure theory accounts for the interplay between role expectations and structural constraints (e.g., the societal belief that adolescents should be not unsupervised late at night influenced the development of curfew laws).

According to Hindelang et al. (1978) each individual can adapt to role expectations and structural constraints on both individual and group levels. For instance, the authors acknowledge that despite similarities in demographic characteristics, people's lifestyles will vary based on their own individual skills, beliefs, and attitudes. On the other hand, although they take into account that lifestyle characteristics are not a constant across demographic groupings, Hindelang and his colleagues contend that individuals with similar demographic profiles are likely to adapt to role expectations and structural constraints in a shared or group level. By recognizing both individual and group adaptation, Hindelang et al.'s (1978) theory is able to account for both the similarities in lifestyle across demographic groups as well as differences between members of the same population. According to lifestyle-exposure theory, adaptation plays a crucial role in

the theoretical model because it leads to what Hindelang et al. (1978) refer to as "regularities in behavioral patterns," or what is otherwise known as lifestyle (p. 244).

One of the final components of Hindelang et al.'s (1978) proposed theoretical model is associations. According to the authors, associations refer to "more or less sustained personal relationships among individuals that evolve as a result of similar lifestyles and hence similar interests shared by these individuals" (p. 245). In other words, Hindelang et al. (1978) contend that associations refer to the relationships that develop out of an individual's lifestyle that in turn can play a role in influencing their exposure to motivated offenders. Specifically, they argue that individuals are more likely to associate and form relationships with others who share the same demographic characteristics (e.g., married women with children are more likely to be friends with other married mothers). The authors illustrate this concept with their principle of homogamy which contends that individuals who share demographic characteristics and lifestyles with offenders will experience a higher risk of victimization because they are more likely to associate, and be exposed, to motivated offenders. Hindelang et al. (1978) assert that results from the NCS that demonstrate that offenders and victims often share similar characteristics (e.g., younger, uneducated males) provide evidence for this principle.

In sum, Hindelang et al.'s (1978) lifestyle-exposure theory perceives personal victimization risk as a direct result of exposure to motivated offenders. Based on this premise, they assert that an individual's lifestyle, which is a function of cultural norms, environmental limitations, and adaptations, shape victimization risk by influencing the likelihood that potential victims will come into contact with, and be exposed to, motivated offenders. Lifestyle-exposure theory has made a significant impact on the field of victimology because it highlights the fact that a person's daily vocational and leisure activities can provide opportunities for victimization.

Routine Activities Theory

In 1979, Cohen and Felson published their seminal piece, *Social Change and Crime Rate Trends: A Routine Activity Approach*, which laid out their routine activities theory. Cohen and Felson's (1979) theory is an aggregate-level theory of victimization that was developed to account for an increase in crime trends following World War II. Drawing from human ecology theory, sources of information on consumer trends, labor force participation, and household structure, as well as a time series analysis of Uniform Crime Report (UCR) data from 1947-1974, Cohen and Felson (1979) contend that variations in U.S. crime rates can be accounted for by variations in society's routine activities along with changes in social patterns and technical advances of society.

Cohen and Felson's (1979) theory differs greatly from other theories that have been utilized by researchers to examine crime trends, because it does not attempt to explain why individuals are motivated to engage in crime. Instead, routine activities theory is classified as a theory of the criminal event because it describes how a crime occurs and what elements are necessary and must be present for the criminal event to be carried out. According to Cohen and Felson's (1979) theory, for a crime to occur, there must be a convergence in time and space of three elements: 1) the motivated offender (i.e., a person who is motivated and willing to engage in crime), 2) the suitable target (i.e., a person or object that is viewed as desirable by the offender), and 3) the absence of a capable guardian (i.e., lack of a person or object that can prevent a crime from occurring). The authors state that a crime is most likely to occur when these elements converge and that the absence of a motivated offender and suitable target, or the presence of a capable guardian is likely to result in the prevention of a crime. According to Cohen and Felson (1979) these three elements comprise the opportunity structure for crime; any

time that motivated offenders and suitable targets come together in the absence of capable guardians, the potentiality for a criminal event exists.

Cohen and Felson's (1979) routine activities theory asserts that crime is an outcome of society's prosperity and develops naturally from legal, everyday activities. Based on this assumption, the authors contend that routine activities can influence the likelihood of victimization because they bring together individuals from different backgrounds at various times in the day. For instance, Cohen and Felson (1979) argue that the time individuals spend at work, in school, or in leisure activities can help explain trends in victimization rates. This proposition was supported from their time series analyses. The authors report that the increase in burglaries observed after the 1960's was greatly influenced by aggregate changes in the U.S. workforce participation. For instance, following WWII, a larger number of women began to enter the workforce which resulted in a great number of homes being left unoccupied during day (i.e., suitable targets lacking capable guardians). Furthermore, Cohen and Felson (1979) argue that such factors as technological advancements that have resulted in the production of more valuable and portable electronics can also play a significant role in influencing crime rates. The authors contend that these types of advancements in society can have a dramatic influence on the number of suitable targets available to potential motivated offenders.

In sum, Cohen and Felson's (1979) routine activities theory is valuable for examining victimization because it highlights the fact that the characteristics and behaviors of crime targets can play a significant role in influencing criminal opportunity and the likelihood that the three necessary elements for a crime will converge in time and space. This theory has been particularly useful in helping scholars both reconceptualize how they perceive the criminal event and recognize that crime can develop out of the everyday fabric of life (e.g., routine behaviors

related to vocational and leisure activities) and not solely from unfavorable characteristics of society (e.g., economic inequality, concentrated disadvantage).

The Lifestyles-Routine Activities Framework

Due to their shared assumption that crime is non-randomly distributed and the similarities between the concepts of lifestyle and routine activities, Hindelang et al.'s (1978) and Cohen and Felson's (1979) theories have been integrated by scholars into a single framework (i.e., the lifestyles-routine activities framework) that can be used to examine the factors that influence an individual's risk of victimization (see Gottfredson, 1981 and Maxfield, 1987). The concepts that are tested within the lifestyles-routine activities framework were laid out by Cohen, Kluegel, and Land (1981) in their micro-level extension of Cohen and Felson's (1979) aggregate-level routine activities theory. Drawing from underlying assumptions of both Hindelang et al.'s (1978) lifestyle-exposure theory and Cohen and Felson's (1979) routine activities theory, Cohen and his colleagues (1981) defined four key theoretical concepts that are hypothesized to shape the opportunity for victimization within this framework. These concepts are: exposure to crime, proximity to crime, target attractiveness, and guardianship.

According to Cohen et al. (1981), exposure to crime refers to "the physical visibility and accessibility of persons or objects to potential offenders at any given time or place" (p. 507). Just as it is hypothesized in Hindelang et al.'s (1978) lifestyle-exposure theory, exposure is expected to have a positive relationship with victimization risk because it influences whether or not a crime target will come into contact with potential offenders. Although Cohen and Felson (1979) do not explicitly discuss exposure in their theory, their motivated offender element bears a close resemblance to Hindelang et al.'s (1978) concept due to routine activities theory's assumption that the victim and offender must converge in time and space. Cohen and his

colleagues (1981) contend that those with the most frequent exposure to offenders will experience the greatest likelihood of victimization.

Proximity refers to the "physical distance between areas where potential targets of crime reside and areas where relatively large populations of potential offenders are found" (Cohen et al., 1981; p. 507). Although there are similarities between proximity and exposure, proximity differs from exposure in that it is focused more specifically on the actual distance between offenders and victims instead of the victim's level of accessibility or visibility (Cohen et al., 1981). Based on the lifestyles-routine activities theory, proximity to crime is hypothesized to have a positive relationship with victimization and crime targets that are physically located closer to pools of offenders are expected theoretically to experience the greatest risk of being a victim. Although proximity was not discussed in either Hindelang et al.'s (1978) or Cohen and Felson's (1979) original theories, the concept is complementary to both perspectives because it can play a role in influencing the likelihood that offenders and victims will converge in time and space. For instance, as Cohen et al. (1981) state, closer spatial proximity to offenders increases the likelihood that victims and offenders will come into frequent contact with one another.

According to Cohen et al. (1981), target attractiveness refers to "material or symbolic desirability of persons or property targets to potential offenders" (p. 508). The authors state that target attractiveness can be separated into two forms depending on the motivation of the offender. The first form is *instrumental* target attractiveness which refers to the desirability of a crime target that the offender aims to acquire (e.g., stolen property during a burglary). The second form is *expressive* target attractiveness. Cohen and his colleagues state that examples would include acts where the sole reward or purpose is hurting or attacking another individual (e.g., assault). Target attractiveness, which closely resembles Cohen and Felson's concept of a

suitable target, is hypothesized to positively influence victimization risk. For instance, the more attractive or desirable the offender perceives a target, the more likely it will be victimized.

The final concept from the lifestyles-routine activities theory is guardianship. Cohen et al. (1981) define guardianship as the effectiveness of people (e.g., residents, security officers, and police) or objects (e.g., CCTV cameras, fences, and security alarms) to block criminal events from occurring. The authors contend that guardianship can occur simply due to the presence of a guardian, or due to some action taken specifically to protect a target. Unlike the other three concepts from the framework, guardianship is hypothesized to have a negative relationship with victimization risk. The concept of guardianship is drawn directly from Cohen and Felson's (1979) routine activities theory and parallels the element of the capable guardian. Just as Cohen and Felson (1979) argue that the absence of a capable guardian is necessary for a criminal victimization to occur, the concept of guardianship is based on the assumption that targets that are well-guarded should experience the lowest likelihood of victimization.

According to Cohen et al. (1981), each of the four concepts are posited to have their own independent effect on victimization risk; however, it is also hypothesized that they have a cumulative effect as well. For instance, crime targets with high levels of proximity, exposure, and target attractiveness, and low levels of guardianship should experience the greatest risk of victimization. On the other hand, any reduction in proximity, exposure, and target attractiveness, or an increase in guardianship is hypothesized to decrease an individual's likelihood of being a victim. Each of these concepts plays a central role in the lifestyles-routine activities framework because they vary based on an individual's daily activities and routine behaviors. For example, an individual who spends a great deal of their leisure time at bars and entertainment districts is going to have greater levels of exposure and proximity than one who spends his/her leisure time at home.

According to Miethe and Meier's (1994) structural-choice model of victimization, an extension of Hindelang et al.'s (1978) lifestyle-exposure theory and Cohen and Felson's (1979) routine activities theory, the four concepts from the lifestyles-routine activities framework can be better conceptualized as reflecting two key components of risk, a structural feature and a choice feature. The structural feature is comprised of the concepts exposure and proximity and influences risk by shaping what Miethe and Meier (1994) describe as the social interaction between victims and offenders that in turn predispose certain crime targets to higher risk situations. On the other hand, they contend that target attractiveness and guardianship are choice components that play the largest role in influencing an offender's target selection. Based on Miethe and Meier's (1994) perspective, exposure and proximity should play the biggest role in influencing whether a victim and offender will converge in time and space, while target attractiveness and guardianship will influence whether an offender will view the victim as a desirable crime target.

Empirical Support for the Lifestyles-Routine Activities Framework

Since the development of Hindelang et al.'s (1978) and Cohen and Felson's (1979) theories, a great deal of research has been conducted to examine the relationship between lifestyles, routine activities, and victimization risk. As will be discussed in the next section of this chapter, empirical tests of the lifestyles-routine activities framework among samples of college students have demonstrated that there is much evidence in support of the theory and the assumption that routine behaviors of crime targets play a key role in shaping the opportunity for both sexual and stalking victimization, particularly for exposure to motivated offenders (Clodfelter et al., 2010; Fisher et al., 1999, 2002; Mustaine and Tewskbury, 1999, 2002; Schwartz and Pitts, 1995). In addition to these studies, empirical tests on non-college

populations also provide evidence in support of the theory and help to shed light on the everyday behaviors that influence victimization risk (see Sampson, 1987; Sampson and Wooldredge, 1987; Massey et al., 1989; Kennedy and Forde, 1990, Lynch and Cantor, 1992; Rountree and Land, 1996, Tseloni and Farrell, 2002). On the whole, despite differences in the units of analysis, sample, and operationalization of routine activities, the findings from the various studies indicate that the lifestyles-routines activities theory provides a valuable framework for examining victimization and identifying its risk factors.

Extensions of the Lifestyles-Routine Activities Framework

Since the inception of the lifestyles-routine activities framework, several researchers have extended the theory in an effort to better account for victimization risk or clarify the theoretical concepts from the framework. As was discussed above, the first major extension to this theoretical perspective was Cohen et al.'s (1981) micro-level extension that laid out and defined the four key concepts tested within the theory (e.g., proximity, exposure, target attractiveness, and guardianship). Following in Cohen and his colleagues' footsteps, Finkelhor and Asdigian (1996) extended upon the theory by developing the concept of target congruence which recognizes that there are individual characteristics unrelated to lifestyle and routine activities that signal vulnerability to offenders and place potential victims at risk. Another important extension to the lifestyles-routine activities framework was developed by Schreck (1999) and further tested and refined by him and his colleagues (Schreck, Wright, and Miller, 2002; Schreck, Stewart, and Fisher, 2006). This extension incorporates elements of self-control theory to gain a greater understanding of victim characteristics that can influence routine activities and victimization risk. Both Finkelhor and Asdigian's (1996) and Schreck's (1999) extensions have been

influential at illuminating the characteristics of victims that influence an offender's target selection processes and will be discussed in more detail below.

Target Congruence. Finkelhor and Asdigian (1996) proposed their modification of the lifestyles-routine activities framework to help account for victimization among youth. The authors contend that while concepts from the framework such as exposure, proximity, and guardianship may contribute slightly to victimization risk, evidence from past research demonstrates that the majority of the individual characteristics related to victimization among youth cannot be attributed to routine activities (e.g., sex, physical or psychological characteristics). Finkelhor and Asdigian (1996) posit that the mechanism at work to influence a youth's victimization risk is not lifestyles or routine activities but target congruence. According to the authors, target congruence recognizes that certain individual characteristics can appear to make potential victims more vulnerable for victimization "because these characteristics have some congruence with the needs, motives, or reactivities of offenders" (p. 6).

Finkelhor and Asdigian (1996) assert that there are three mechanisms in which target congruence is related to victimization risk. The first mechanism is through target vulnerability which refers to cases in which an individual experiences an increased risk of being a victim because they possess characteristics that make them an easy crime target or hinder their ability to resist an offender (e.g., small size, physical weaknesses). Target gratifiability, the second form of target congruence, refers to the process in which an individual has an elevated risk because he/she possesses characteristics that the offender desires to obtain or manipulate (e.g., being a female in regards to a sexual victimization). The final mechanism in which target congruence influences risk is through target antagonism. According to Finkelhor and Asdigian (1996), target antagonism refers to an increased risk that individuals may experience due to possessing

characteristics that arouse anger or other negative emotions in offenders (e.g., a particular ethnicity in regards to a hate crime victimization). The authors contend that while target congruence is a concept that is distinct from the lifestyles-routine activities framework, it closely resembles target attractiveness; particularly target gratifiability. Based on their analysis of data from the National Youth Survey, Finkelhor and Asdigian (1996) found that measures of target congruence (e.g., psychological distress and physical limitations) were significantly related to victimization risk, and that they operated independently of routine activities. In sum, this modification of the lifestyles-routine activities theory is valuable because it helps to accentuate the various dimensions of target attractiveness, or the factors that influence whether a motivated offender will view a crime target as a desirable and suitable.

Self Control Theory. One of the most recent extensions to the lifestyles-routine activities framework has been proposed by Schreck and his colleagues (Schreck, 1999; Schreck et al., 2002; Schreck et al., 2006). According to Schreck (1999), in addition to lifestyle and routine activities, an individual's level of self-control can also play a large role in influencing whether he/she will experience a victimization. Schreck's (1999) concept of self-control was drawn from Gottfredson and Hirschi's (1990) self-control theory, a criminological theory developed to account for involvement in crime. According to Gottfredson and Hirschi (1990), low self-control, which is characterized by such factors as impulsivity, failure to partake in long-term planning, and the inability to delay gratification, is highly related to involvement in criminal behavior. Drawing from Gottfredson and Hirschi's (1990) theory, Schreck's (1999) posits that the same traits that are associated with low-self control among offenders can also play an important role in shaping criminal opportunity and an individual's likelihood of being a victim.

In particular, he contends that lower levels of self-control are associated with higher levels of victimization risk.

Schreck (1999) asserts that self-control can shape criminal opportunity for both personal and property victimization because it can directly influence lifestyle characteristics and routine activities. For instance, due to such traits as impulsivity and the failure to plan ahead, individuals with low self-control may be less likely to utilize guardianship behaviors to protect themselves, increasing the likelihood that they or their property will be perceived by offenders as a suitable, unguarded target. Furthermore, traits such as a lack of sensitivity to others' feelings and the failure to consider the consequences of acts that are associated with low self-control could also influence victimization risk. For example, in verbal altercations, individuals with low self-control may be more likely to provoke offenders which could result in an increased risk of a personal victimization (e.g., assault). The assumption that the level of self-control can influence the opportunity structure for victimization is closely related to elements of Finkelhor and Asdigian's (1996) target congruence. For instance, individuals with low self-control may be perceived by offenders as more vulnerable targets (i.e., target vulnerability), or their individual traits (e.g., impulsivity) may arouse negative emotions (i.e., target antagonism) within an offender that results in their elevated risk of victimization. Schreck's (1999) integration of self-control into the lifestyles-routine activities framework is both innovative and valuable because it takes into account that dispositional characteristics (e.g., self-control) can be antecedents to lifestyles and routine activities in addition to Hindelang et al.'s (1978) role expectations, structural constraints, and adaptations.

Since the inception of this perspective, Schreck and his colleagues have found much support for the interplay between self-control, routine activities, and victimization risk. Schreck's (1999) analysis on a sample of college students was the first study to find evidence

that self-control was negatively related to victimization risk. Although he did not explicitly examine lifestyle characteristics or routine activities in his analysis, Schreck (1999) found evidence that once self-control was added to the model, the effects of demographic characteristics, which could act as proxy measures for lifestyle, significantly diminished. Additionally, based on their analysis of a sample of high school students, Schreck et al. (2002) report that that self-control had a significant indirect effect on victimization through risky lifestyles. This finding provides support for Schreck's (1999) original proposition that self-control can be an antecedent to lifestyle and routine activities. Schreck et al.'s (2006) analysis of youth panel data also demonstrates that low self-control can be a precursor to victimization. For instance, they found that youth who reported low self-control at time 1 were more likely to report experiencing a victimization at time 2. Taken together, the findings from these studies reveal that self-control plays an important role in influencing both routine activities and victimization risk. In sum, this perspective is valuable for highlighting the fact that an individual's dispositional characteristics (e.g., self-control) can influence their lifestyle and daily behaviors, and subsequently, the likelihood that they will experience a victimization.

The lifestyles-routine activities theory and its extensions provide the framework from which this current study will examine the relationship between disability status, routine activities, and sexual and stalking victimization. As will be discussed in greater detail below, when applied to college students, the lifestyles-routine activities theory plays a very influential role in helping researchers identify the routine behaviors that college students partake in that shape their victimization risk. However, as Chapter 2 discusses in more depth, there are no studies that have examined disability status as a risk factor for victimization from within the lifestyles-routine activities framework. Therefore, nothing is known about whether disability status influences risk net of an individual's routine activities. It is the primary objective of this

dissertation to explore the interplay between disability status, routine behaviors, and sexual and stalking victimization.

RISK FACTORS FOR VICTIMIZATION AMONG COLLEGE STUDENTS

The prevalence estimates for sexual and stalking victimization previously presented provide a description of the nature and extent of victimization among college students. In particular, the finding that approximately 3-16% and 6-13% of college students reported being a victim of a sexual and stalking victimization respectively, coupled with the finding that college students are more likely to report such victimizations than general samples of adults in the U.S., indicates that there may be something specific about this population that is placing them at an increased risk of victimization. In an effort to better understand this elevated likelihood of victimization, several researchers have estimated multivariate models to predict sexual and stalking risk among samples of college students (Abbey, Ross, McDuffie, and McAuslan, 1996; Benson, Gohm, and Gross, 2007; Cass, 2007; Clodfelter et al., 2010; Combs-Lane and Smith, 2002; Corbin, Bernat, Calhoun, McNair, and Seals, 2001; Fisher et al., 1999, 2002; Fox, Gover, and Kaukinen, 2009; Fox, Nobles, and Akers, 2011; Franklin, 2010a, 2010b, 2011; Gidycz, Orchowski, King, and Rich, 2008; Gross, Winslett, Roberts, and Gohm, 2006; Howard, Griffin, and Boekeloo, 2008; Kaysen, Neighbors, Martell, Fossos, and Larimer, 2006; Krebs et al., 2009; Marx, Nichols-Anderson, Messman-Moore, Miranda, and Porter, 2000; McCauley, Calhoun, and Gidycz, 2010; Messman-Moore, Coates, Gaffey, and Johnson, 2008; Minow and Einolf, 2009; Mohler-Kuo et al., 2004; Mustaine and Tewksbury, 1999, 2002; Schwartz and Pitts, 1995; Ullman, Karabatsos, and Koss, 1999). Some of these studies are tests of the lifestyles-routine activities framework that aim to identify the specific lifestyle characteristics and routine activities that influence a college student's risk for victimization. On the other hand, while they

are not explicit tests of the lifestyles-routine activities framework, there are studies that have examined risk factors for victimization among college students that lend support to the theory and help researchers identify the behaviors of college students that influence their victimization risk.

The lifestyles-routine activities framework is valuable for analyzing risk among college students because they are known to partake in behaviors that greatly shape their opportunity for victimization. For instance, many college students' tenure at school is characterized by a party lifestyle where there is excessive alcohol consumption and the use of recreational drugs, as well as, limited adult supervision (Krebs et al., 2009). Additionally, college is also a time where students begin to experiment more with dating relationships and sexual experiences (Krebs et al., 2009). College enrollment also signifies a time where students experience a great amount of autonomy and spend much of their time meeting new people (e.g., other students, fellow residents in the dormitory) and being introduced to new situations (e.g., college environment, fraternity/sorority parties, college sporting events). Each of these types of behaviors can play a significant role in affecting risk; particularly by influencing the students' exposure and proximity to offenders, target attractiveness, and guardianship behaviors. Tables 1.2 and 1.3 provide a summary of the significant demographic characteristics and predictors of sexual and stalking victimization from studies that have examined risk among college students in the United States. These studies provide support that the lifestyles-routine activities framework can help account for victimization within the college population.

Demographic Characteristics

Results from the various studies that have examined sexual and stalking victimization among samples of college students demonstrate that there are specific demographic

characteristics that appear to be related to risk of victimization even when controlling for lifestyle characteristics and routine activities. A summary of these characteristics can be found in Table 1.2.

One demographic characteristic that appears to be consistently related to an increased risk of sexual and stalking victimization is the victim's sex. In particular, the studies that have examined both male and female college students report that women experienced a higher likelihood of being a victim of both a sexual or stalking offense (Cass, 2007; Fox et al., 2011; Howard et al., 2008). In addition to an individual's sex, sexual orientation also appears to play an important role in shaping risk. Fisher et al. (1999) and Clodfelter et al. (2010) found that heterosexuals experienced a lower risk of a sexual victimization when compared to individuals with other sexual preferences (e.g., homosexual, bisexual, unsure). Similarly, Fox et al. (2011) report that non-heterosexual individuals experienced a higher risk of being a stalking victim. Furthermore, Fisher et al. (1999; 2002) found that female students from families with higher socio-economic statuses had a higher risk of both sexual and stalking victimization.

Another demographic characteristic that has been found to be related to risk of sexual and stalking victimization is race and ethnicity. Although each study operationalizes race and ethnicity differently, it appears that nonwhite individuals are more likely to report both types of victimization when compared to whites. For instance, Clodfelter et al. (2010) report that nonwhite students were more likely to experience sexual assault than white students. Similarly, Fisher et al. (1999) found that African American and Hispanic/Latina students were more likely than white students to report a sexual victimization. Furthermore, they report that Native American/Native Alaskan and Non-Hispanic Latinas were more likely than whites to experience a stalking victimization. Krebs et al. (2009) also found evidence that Native Americans, Asians,

Table 1.2: Significant Demographic Characteristics Related to Sexual and Stalking Victimization Among College Students

Demographic Characteristics	Sexual	Stalking	Authors:
Female	+	+	Cass (2007); Fox et al. (2011); Howard et al. (2008)
Heterosexual	-	-	Clodfelter et al. (2010); Fisher et al. (1999); Fox et al. (2011)
Family Socio-Economic Status	+	+	Fisher et al. (1999)
Nonwhite	+/-	+/-	Clodfelter et al. (2010); Fisher et al. (1999); Krebs et al. (2009); Mohler-Kuo et al. (2004)
Year in School	+/-		Franklin (2010b); Gross et al. (2006); Krebs et al. (2009); Schwartz and Pitts (1995)
Age	+/-	+	Clodfelter et al. (2010); Fisher et al. (1999); Fox et al. (2011); Ullman et al. (1999)

Native Hawaiians, and Pacific Islanders were more likely to be a victim of a sexual assault. On the other hand, Fisher et al. (1999) report that Asian and Pacific Islander students experienced a lower risk of victimization than white students. However, in contrast to these studies, Mohler-Kuo et al.'s (2004) analysis found evidence that white students were more likely than nonwhite students to experience an intoxicated rape.

Two demographic characteristics that have received much mixed support across the studies is a respondent's year in school and age. For instance, some studies found that older, more advanced students experience the greatest risk, while others found that risk is highest for younger, underclassman students. Krebs et al. (2009), Franklin (2010b), and Schwartz and Pitts (1995) all report that years in school had a positive relationship to sexual victimization risk. However, Gross et al. (2006) report that the majority of sexual assault victims reported that they

had been a victim during one of the first four semesters they were enrolled in college (e.g., freshman and sophomore years) and Fisher et al. (1999) found that when compared to graduate students, undergraduates experienced a higher risk of sexual victimization. A similar pattern concerning age has also emerged from the research. For instance, Clodfelter et al. (2010), Fisher et al. (1999), and Mohler-Kuo et al. (2004) all report that age has a negative effect on sexual victimization, indicating that younger students experience the greatest risk of being a victim. However, Ullman et al.'s (1999) analysis found that older students were more likely to experience a rape victimization. Furthermore, Fox et al. (2011) report a positive relationship between age and stalking victimization risk.

Taken together, the studies demonstrate that there are specific demographic characteristics that are related to risk for sexual and stalking victimization net of lifestyle characteristics and routine activities. In particular, there is evidence that while male students are victims of sexual and stalking victimization, their risk is not as large as that experienced by female students. Another at-risk population appears to be students with non-heterosexual sexual preferences. Each study that controlled for sexual orientation found evidence that heterosexual students had lower risk of both stalking and sexual victimization than compared to their non-heterosexual counterparts. Additionally, on average, non-white students were found to have a higher risk of sexual and stalking victimization when compared to white students. In contrast to these fairly stable findings, the research is mixed concerning the relationship between a student's age and year in school and victimization risk. There is evidence that both older and younger students experience a heighted risk of sexual victimization.

Table 1.3: Significant Predictors of Sexual and Stalking Victimization Among College Students

Concept *Sub-grouping* Measure	Sexual	Stalking	Authors:
Exposure			
Alcohol Consumption and Drinking Behaviors			
Alcohol Consumption	+	+	Abbey et al. (1996); Benson et al. (2007); Combs-Lane and Smith (2002); Corbin et al. (2001); Fisher et al. (1999); Fisher et al. (2002); Gidycz et al. (2008); Gross et al. (2006); Howard et al. (2008); Kaysen et al. (2006); Krebs et al. (2009); Marx et al. (2000); McCauley et al. (2010); Messman-Moore et al. (2008); Minow and Einolf (2009); Mohler-Kuo et al. (2004); Mustaine and Tewksbury (1999); Schwartz and Pitts (1995); Ullman et al. (1999)
Risk-Taking Behaviors			
Illicit Drug Use	+	+	Cass (2007); Howard et al. (2008); Mohler-Kuo et al. (2004); Mustaine and Tewksbury (1999); Mustaine and Tewksbury (2002)
Marijuana Use	+		Gidycz et al. (2008); Krebs et al. (2009); Messman-Moore et al. (2008)
Number of Consensual Sex Partners	+		Abbey et al. (1996); Benson et al. (2007); Corbin et al. (2001); Franklin (2010a); Franklin (2010b); Franklin (2011); Krebs et al. (2009)

Table 1.3 (continued)

Concept *Sub-grouping* Measure	Sexual	Stalking	Authors:
Pornography Consumption	+		Franklin (2010a); Franklin (2011)
Risky Sexual Activities	+		Combs-Lane and Smith (2002); Franklin (2010a)
College- and School-Related Activities			
Participation in Campus Activities	+		Clodfelter et al. (2010)
Sorority Membership	+		Franklin (2010b); Minow and Einolf (2009); Mohler-Kuo et al. (2004)
Member of School Groups/Clubs/Organizations	+		Mustaine and Tewksbury (2002)
Member of College Athletic Team	+		Mustaine and Tewksbury (2002)
General Leisure Activities			
Attends Parties/Fraternity Parties/Greek Events	+		Combs-Lane and Smith (2002); Krebs et al. (2009); Minow and Einolf (2009)
Goes to the Movie	-		Mustaine and Tewksbury (2002)
Frequently Hangs Out	+		Mustaine and Tewksbury (2002)
Goes Out at Night for Leisure	+		Mustaine and Tewksbury (2002)
Shops at the Mall		+	Mustaine and Tewksbury (1999)
Propensity to be at Places with Men	+		Fisher et al. (1999)

Table 1.3 (continued)

Concept *Sub-grouping* Measure	Sexual	Stalking	Authors:
Lives on Campus	+	-	Clodfelter et al. (2010); Mohler-Kuo et al. (2004); Mustaine and Tewksbury (1999)
Lives in Sorority House	+		Mohler-Kuo et al. (2004)
Spends Weekends on Campus	+		Clodfelter et al. (2010)
Has Friends Who Get Women Drunk to Have Sex	+		Schwartz and Pitts (1995)
Receives Uncomfortable Advances in Bars	+		Schwartz and Pitts (1995)
Target Attractiveness			
Relationship Status/Exclusive Dating/Dating	+	+	Cass (2007); Combs-Lane and Smith (2002); Fisher et al. (1999); Fisher et al. (2002); Franklin (2010a); Franklin (2010b); Franklin (2011)
Guardianship			
Carries Pepper Spray	-	+	Clodfelter et al. (2010); Mustaine and Tewksbury (1999)
Escorted to Car	-		Clodfelter et al. (2010)
Lives Alone	+		Fisher et al. (1999); Fisher et al. (2002)
Carries Pocket Knife		+	Mustaine and Tewksbury (1999)

Table 1.3 (continued)

Concept *Sub-grouping* Measure	Sexual	Stalking	Authors:
Other Relevant Risk Factors			
Prior Victimization	+		Clodfelter et al. (2010); Fisher et al. (1999); Fisher, et al. (2002); Gidycz et al. (2008); Krebs et al. (2009)
Self-Control	-	-	Fox et al. (2009); Franklin (2010a); Franklin (2011)

Exposure

Exposure to offenders, which refers to the visibility and accessibility of crime targets, has been widely measured in studies examining sexual and stalking victimization among college students. See Table 1.3 for a summary of the significant exposure measures from these studies. Based on the results from past research there appears to be four groups of exposure-related routine activities that influence risk of victimization. These daily and routine behaviors include: 1) alcohol consumption and drinking behaviors, 2) risk-taking behaviors, 3) college- and school-related activities, and 4) general leisure activities. Each of these groups of measures plays an important role in shaping college students' opportunity for victimization by influencing the likelihood that they will be visible and accessible to potential motivated offenders.

Alcohol Consumption and Drinking Behaviors. Alcohol consumption and use is one of the most consistently significant predictors of sexual victimization among college students. The positive relationship between alcohol consumption and sexual victimization risk has been observed in studies utilizing small (e.g., N<500; Benson et al., 2007; Combs-Lane and Smith, 2002; Corbin et al., 2001; Marx et al., 2000; McCauley et al., 2010; Messman-Moore et al., 2008; Schwartz and Pitts, 1995), medium (N=500-3,000; Abbey et al., 1996; Gidycz et al., 2008; Gross et al., 2006; Howard et al., 2008; Kaysen et al., 2006; Minow and Einolf, 2009), and large (N=3,000+; Fisher et al., 1999; Krebs et al., 2009; Mohler-Kuo et al., 2004; Ullman et al., 1999) samples of students. Based on the results from the analyses, respondents who reported consuming alcohol were significantly more likely to report experiencing a sexual assault and rape victimization, which includes both forced and intoxicated rapes, than students who abstained from alcohol. (Abbey et al., 1996; Benson et al., 2007; Combs-Lane and Smith, 2002; Gidycz et al., 2008; Gross et al., 2006; Kaysen et al., 2006; Krebs et al., 2009; Marx et al., 2000;

Minow and Einolf, 2009). In support of these findings, Howard et al. (2008) found that students who specifically stated that they avoided alcohol were significantly less likely to experience a sexual assault victimization.

In addition to evidence that general use of alcohol is associated with an increased risk of sexual victimization, there is also evidence that heavy alcohol use and binge drinking plays an important role in shaping sexual victimization risk. Mohler-Kuo et al. (2004) report that both occasional and frequent heavy episodic drinking were significantly related to an increased risk of rape victimization, and Messman-Moore et al. (2008) also found that heavy drinking was related to being a victim of a rape. Similarly, Corbin and his colleagues (2001) found that women students with more severe histories of sexual victimization (e.g., forced rape), consumed more alcohol on a weekly basis than nonvictims and students with less serious histories of victimization (e.g., unwanted sexual contact). Binge drinking, defined as the consumption of 4 or more drinks for females and 5 or more drinks for males in one sitting, also appears to have a strong relationship with the likelihood of being a victim of a sexual offense. For instance, Combs-Lane and Smith (2002), Howard et al. (2008), and McCauley et al. (2010) each found that respondents who reported binge drinking were more likely to experience a sexual victimization. Furthermore, Ullman et al. (1999) report that alcohol abuse propensity was significantly related to sexual assault severity.

Schwartz and Pitts (1995) report that in addition to the actual number of drinks a respondent consumes during a drinking occasion, those who went out more times a week to go drinking were also more likely to experience a rape. Fisher et al.'s (1999) analysis also found evidence that alcohol influences the likelihood that a sexual victimization will occur. They report that the propensity to be at places where alcohol was served increased risk for sexual assault, while frequently drinking enough to get drunk increased risk for both rape and sexual

assault victimization. In addition, Krebs and his colleagues (2009) report that women who partook in sexual intercourse while intoxicated where more likely to experience a forced and incapacitated rape. Similar to what has been observed for sexual victimization, research on stalking victimization also demonstrates a positive relationship between alcohol consumption and risk. For instance, Mustaine and Tewksbury (1999) found that female students that drank at home more often and those that got drunk in public had a higher risk of experiencing a stalking victimization. Similarly, Fisher and her colleagues (1999) report that the propensity to be at places with alcohol increased a female student's risk of being a stalking victim. In sum, the research demonstrates that alcohol consumption plays a substantial role in influencing the opportunity structure for both sexual and stalking victimization.

Risk-Taking Behaviors. In addition to the consumption of alcohol, past research also demonstrates that there are other risky behaviors that college students partake in that can influence their risk of victimization by increasing the likelihood that they will be exposed to motivated offenders. One particular risky behavior that has been found to be related to sexual and stalking victimization risk is the use of illicit drugs. Analyses conducted by Cass (2007), Howard et al. (2008), and Mohler-Kuo et al. (2004) each found evidence that there was a positive relationship between illicit drug use (e.g., opiates, methamphetamines, hallucinogens, marijuana) and sexual victimization risk and, that students who reported consuming recreational drugs were more likely to experience a sexual assault victimization. Furthermore, research demonstrates that respondents who reported smoking marijuana were more likely than non-marijuana users to be victims of sexual assault and rape (Gidycz et al., 2008; Krebs et al., 2009; Messman-Moore et al., 2008). In addition, Mustaine and Tewksbury (1999, 2002) found that female students that reported buying drugs in the past were more likely to experience both a

sexual and stalking victimization. They also report that public drug use was associated with an increased risk of general and serious sexual assault.

Risky behaviors related to sexual activity also appear to be related to an increased risk of sexual victimization. One such behavior, which greatly influences the likelihood that a victim will be exposed to potential offenders, is the number of a respondent's consensual sexual partners. Research studies on small, medium, and large samples of college students all provide evidence that a greater number of lifetime sexual partners is associated with an increased risk of sexual victimization (Abbey et al., 1996; Benson et al., 2007; Corbin et al., 2001; Franklin, 2010a, 2010b, 2011; Krebs et al., 2009). Franklin (2010a, 2011) asserts that another sexual-related behavior that is related to increased risk of sexual victimization is pornography consumption. Her analyses found that women who reported viewing more types of pornography (e.g., books, movies, websites) and viewing pornography more frequently experienced a higher risk of being a victim of an alcohol-induced sexual assault. Combs-Lane and Smith (2002) report that women who partook in risky sexual activities such as having intercourse with multiple partners, partaking in casual sex with strangers, and leaving a party with a stranger, were significantly more likely to report a sexual victimization than students with safer sexual activity practices. Taken together, the research on drug use and risky sexual practices provides evidence that behaviors that expose students to potential offenders increase their risk of victimization.

College- and School-Related Activities. College- and school-related activities compromise another set of routine behaviors that can shape a college student's risk of sexual victimization. These behaviors differ from the other groups of exposure measures because they can be viewed as activities that college students traditionally participate in. For instance, Clodfelter et al. (2010) found that students that participated in campus activities were more likely

to report a sexual victimization. Similarly, Mustaine and Tewksbury (2002) found that membership in school groups, clubs, and organizations was associated with an increased risk of both general and serious sexual assault. They also report that women who participated in college athletics were more likely to be victimized than women who did not participate in sports. In addition to participation in sports and athletics, some researchers have found a positive relationship between sorority membership and sexual victimization risk. Minow and Einolf's (2009) analysis found that sorority members were 4x more likely to report a victimization than nonmembers and that significant differences between these two groups were observed even after controlling for alcohol consumption and attendance at parities. Franklin (2010b) also reports that Greek affiliation was related to an increased risk of forced rapes and threats, and Mohler-Kuo et al. (2004) found that sorority members were more likely to experience a rape than nonmembers.

General Leisure Activities. Activities that college students partake in during their leisure time can also shape their opportunity for victimization. One leisure activity that has been associated with increased risk, and can provide the context for sexual victimization, is attendance at college and fraternity parties. Combs-Lane and Smith (2002) report that students who were involved in social activities such as parties were more likely to experience a sexual victimization. Krebs et al. (2009) also found a link between partying and sexual assault. They report that women who attended fraternity parties had a higher likelihood of being a victim of an incapacitated sexual assault. In addition, Minow and Einolf (2009) report that attendance at Greek events where alcohol was served increased risk for sexual assault victimization. Mustaine and Tewksbury (1999, 2002) found that a wide-variety of leisure activities can play a role in influencing a female student's risk of victimization. They report that respondents that frequently hung out and went out at night for leisure experienced an increased risk of sexual assault

victimization, while going to the movie more frequently was associated with decreased risk. For stalking victimization, Mustaine and Tewksbury (1999) found that female students that shopped at the mall more frequently were more likely to be victimized. Furthermore, Fisher and her colleagues (1999) report that the propensity to be at places with men was positively related to risk of rape victimization.

Proximity

As Table 1.3 indicates, tests of the lifestyles-routine activities framework on samples of college students most commonly operationalize proximity to offenders in terms of respondents' living arrangements and the time they spend on campus. Based on the theory, students with higher levels of proximity to crime will be more likely to experience a victimization because they are located within a close distance to pools of offenders. For instance, students who live on campus are hypothesized to have a higher likelihood of victimization because they are located close to potential motivated offenders (e.g., other students). Although proximity to crime has not been measured as extensively as exposure to crime, findings from past research indicate that proximity plays an important role in influencing a college student's risk of victimization.

According to analyses by Mohler-Kuo et al. (2004) and Clodfelter et al. (2010), students who reported living on campus were more likely to experience a sexual victimization than those who lived off campus. However, in contrast to these findings, Mustaine and Tewksbury (1999) found that living on campus was negatively related to stalking victimization risk and that students who lived on campus were less likely to report being a victim of stalking. Mohler-Kuo and his colleagues (2004) also found an increased risk of rape victimization for women who lived in sorority houses, which was a significant predictor independent of sorority membership. Additionally, Clodfelter et al. (2010) report that students who spent their weekends on campus

were more likely to experience a sexual assault victimization. Schwartz and Pitts (1995) analysis also found support for the relationship between proximity to crime and sexual victimization risk. They report that female students that had friends who would get women drunk to have sex, and those who received uncomfortable advances in bars were more likely to experience a sexual victimization.

Target Attractiveness

Operationalizing target attractiveness in studies examining sexual and stalking victimization risk among college students poses a challenge to researchers because they must identify individual characteristics that respondents possess and that offenders desire. Due to this difficulty, very few target attractiveness measures have been examined in past tests of the lifestyles-routine activities framework for sexual and stalking victimization. However, one measure of target attractiveness that has been examined in past studies, and as indicated in Table 1.3, has a well-supported relationship with sexual and stalking victimization risk, is relationship status. In particular, past research demonstrates that individuals in long-term, committed relationships have a lower risk of being a sexual or stalking victim. For instance, Fisher et al. (1999, 2002) found that women who reported dating (i.e., in a committed relationship of more than one year, in a committed relationship of less than one year, and some dating) were more likely to report a sexual assault, rape, and stalking victimization than female students who were married.

Cass (2007) also found that marital status was significantly related to sexual assault risk and that married individuals were less likely to be victimized. Combs-Lane and Smith (2002) also found evidence that dating was related to sexual victimization risk. Similar to these studies, Franklin's (2010a, 2010b, 2011) analyses provides evidence of a significant link between

relationship status and sexual victimization risk. She reports that single respondents were more likely to experience an alcohol-induced and forced rape than respondents who were in exclusive dating relationships. Based on the lifestyles-routine activities framework, these findings are supportive of the target attractiveness concept. For instance, it makes theoretical sense that, on average, potential sexual and stalking offenders would be more attracted to single targets than those who are married or in long-term partnerships.

Guardianship

The final theoretical concept from the lifestyles-routine activities framework that has been examined among samples of college students is guardianship; which refers to a group of behaviors that can block the opportunity for a victimization. Table 1.3 provides a list of guardianship measures that have been found to be significantly related to sexual and stalking victimization in past research. As the table shows, several authors have found support for the relationship between guardianship and sexual victimization risk. For instance, Clodfelter et al. (2010) report that students who carried pepper spray were less likely to experience a sexual assault victimization than students who did not. Additionally, they found that students who were more frequently escorted to their cars experienced lower risk. In contrast to these findings, guardianship practices have not been as strongly supported in studies on stalking victimization. For instance, although Clodfelter et al. (2010) found a link between carrying pepper spray and reduced risk of sexual victimization, Mustaine and Tewksbury (1999) found a positive association between carrying mace and stalking victimization. Furthermore, they also report that respondents who carried a pocket knife were more likely to report a stalking victimization.

One plausible explanation for the positive relationships observed in Mustaine and Tewksbury's (1999) study is that they utilized cross-sectional data which makes it impossible to

establish temporal order and determine whether the guardianship behavior preceded the victimization in time. For instance, they contend that victims could be partaking in safety precautions after they become aware that they are being stalked. However, in contrast to Mustaine and Tewksbury (1999), Fisher et al.'s (1999, 2002) analyses found support for a link between guardianship and stalking victimization risk. In both their analyses for sexual and stalking victimization, Fisher and her colleagues (1999, 2002) report that students who lived alone were more likely to experience a victimization. Based on the lifestyles-routine activities theory, this finding is supportive of the framework because individuals who live alone are less likely to have people around them that can act as guardians when compared to individuals who live with roommates or family members. In sum, although examining the relationship between guardianship behaviors and victimization is complicated by the use of cross-sectional data, past studies do find evidence that like the other concepts from the framework, guardianship is a key element that shapes an individual's risk of sexual and stalking victimization.

Other Relevant Concepts

In addition to measures of the four concepts from the lifestyles-routine activities framework, researchers have also found evidence that there are other individual-level characteristics that are related to a college student's risk for sexual and stalking victimization. Although these factors are not direct measures of specific lifestyle characteristics or routine behaviors, they are relevant to discuss because they have implications for the lifestyles-routine activities perspective, particularly for Schreck's (1999) extension. Similar to Schreck's (1999) findings in regards to violent and property victimization, there is evidence that self-control can play an important role in shaping the opportunity for sexual and stalking victimization (see Table 1.3). For instance, Fox et al.'s (2009) analysis found that there was a significant, negative

relationship between self-control and stalking victimization risk. Franklin (2011) reports a similar finding in regards to sexual victimization. Similar to Fox et al. (2009), they assert that individuals with low self-control were more likely to report being victimized than individuals with higher levels of self-control. Related, Franklin (2010a) reports that individuals with poor risk response (e.g., the ability to recognize risky situations and respond to danger cues) were more likely to experience a sexual assault victimization. Although Franklin (2010a) does not explicitly measure the relationship between self-control and victimization, her finding taps into dimensions of self-control and can provide support that dispositional characteristics of victims can also play a role in shaping victimization risk and lifestyle behaviors.

Another notable risk factor for sexual and stalking victimization is prior victimization. Table 1.3 demonstrates that several authors have found support for the relationship between past victimization events and future victimization events for both stalking and sexual offenses. For instance, Fisher et al. (1999, 2002) report that women who reported experiencing a victimization in the past were more likely to experience a sexual assault, rape, and stalking victimization. Similarly, Clodfelter et al. (2010) found that prior sexual assault victimization was related to increased risk, and Krebs et al. (2009) also found evidence of a positive relationship between prior victimization and risk of being a rape victim. The findings in regards to both self-control and prior victimization have important implications for studies examining college students and testing the lifestyles-routine activities framework. For instance, students' levels of self-control as well as experiences with prior victimization may greatly shape their lifestyle characteristics and routine behaviors, which in turn can influence the opportunity structure for victimization.

Summary of Risk Factors

Take together, the results from the empirical tests of the lifestyles-routine activities framework and other studies on samples of college students provide evidence that the lifestyle characteristics and the daily activities of college students do play a significant role in influencing their risk of victimization. Although exposure and proximity to crime appear to exhibit the strongest relationship with victimization, measures representing each of the four concepts from the lifestyles-routine activities framework (e.g., exposure, proximity, target attractiveness, and guardianship) were found to be related to sexual and stalking victimization in the theoretically-hypothesized direction. The results from the past studies are extremely valuable for demonstrating the utility of applying the lifestyles-routine activities theory to college students' sexual and stalking victimization risk. In particular, the results are helpful for shedding light on the specific lifestyle characteristics and daily behaviors that shape students' opportunity for victimization. As the studies demonstrate, some of these routine behaviors could be classified as risky behaviors (e.g., heavy alcohol consumption, illicit drug use, risky sexual practices), while others simply reflect everyday and traditional behaviors of college students (e.g., participating in college activities, dating, spending leisure time outside of the home).

However, in addition to lifestyle characteristics and routine activities, research suggests that another important risk factor that can shape an individual's opportunity for victimization is disability status. Although no studies have examined the relationship between disability status and victimization risk among samples of college students, prior research on samples of children and adults indicate that individuals with disabilities are at a heighted risk for sexual victimization when compared to individuals without disabilities (Alriksson-Schmidt, Armour, and Thibadeau, 2010; Armour, 2008; Brownlie et al., 2007; Brownridge, 2006; Casteel, Martin, Smith, Gurka, and Kupper, 2008; Cuevas, Finkelhor, Ormrod, and Turner, 2009; Harrell and Rand, 2010;

Martin et al., 2006; Rand and Harrell, 2010; Smith, 2008; Young, Nosek, Howland, Chanpong, and Rintala, 1997). The relationship between disability status and victimization risk, and the aim of this current study, are discussed in more detail in Chapter 2. As will be explored in greater depth in the following chapter, the interplay between disability and risk of victimization has implications for, and is complementary with, the lifestyles-routine activities framework.

Chapter 2

SEXUAL VICTIMIZATION AMONG INDIVIDUALS WITH DISABILITIES

The U.S. Census Bureau (2009) estimates that in the year 2009 there were approximately 36 million individuals aged 12 and older in the United States that reported having a disability. Research conducted on individuals with disabilities indicates that a notable proportion of the population will experience a sexual victimization in their lifetime (Alriksson-Schmidt et al., 2010; Brownlie et al., 2007; Brownridge, 2006; Casteel et al., 2008; Harrell and Rand, 2010; Martin et al., 2006; Rand and Harrell, 2009; Smith, 2008). In particular, evidence suggests that when compared to those without disabilities, individuals with disabilities are significantly more likely to report a being a victim of a sexual assault or rape. However, despite the fact that there is research demonstrating a heightened risk for victimization among individuals with disabilities, very little is known about why this increased risk exists. That is, while it appears that individuals with disabilities are more likely to experience a victimization, researchers do not fully understand what theoretical or empirical mechanisms are accounting for the relationship. This chapter will discuss disability and its relationship with victimization risk. Special attention will be placed on describing how disability status is compatible with the lifestyles-routine activities framework and can help explain why certain individuals experience a heightened likelihood of reporting a sexual and stalking victimization.

DISABILITY: DEFINITION AND NATIONAL PREVALENCE

Definition of Disability

Disability is a social construct with a definition that varies greatly depending upon the source. Many international and national agencies, professional associations, non-profit

organizations, and legislation have provided medical and legal definitions of disability. One of the most widely-cited definitions of disability comes from the World Health Association's (2001) *International Classification of Functioning, Disability, and Health*. According to the WHO, "disability serves as an umbrella-term for impairments, activity limitations or participation restrictions" (p. 3-4). The WHO defines impairments as problems in body functions (e.g., physiological and psychological functions) or body structure (e.g., organs and limbs) that deviate from the population norm. This comprises such conditions as mental, sensory, speech, or neuromusculoskeletal losses or defects. According to the WHO, activity limitations refer to "difficulties an individual may have in executing activities" while participation restrictions refers to "problems an individual may experience in involvement in life situations" (p. 12). Examples of activity limitations and participation restrictions include impediments in mobility, self-care, learning and applying knowledge, and communication. In sum, the WHO defines disability quite broadly as any deficit in body functions or structures that deviate from the population norm and/or that restrict or limit a person's ability to execute certain tasks and actions.

In addition to the WHO, there are several other organizations and national-level legislation that provide definitions of disability that are widely utilized in the United States for both research and practice. One of the most influential of these definitions is included in the Americans with Disabilities Act of 1990 (ADA). According to the ADA, disability refers to "a physical or mental impairment that substantially limits one or more of the major life activities of such individual" (42 U.S.C. § 12102). The U.S. Equal Employment Opportunity Commission (2009) asserts that the ADA definition requires that individuals meet three criteria to be considered to have a disability; these include: 1) having an impairment (e.g., physiological or psychological disorder that affects body or mental processes) and 2) being substantially limited

(e.g., restricts an individual's ability to perform tasks the same as the general population) in 3) major life events (e.g., self-care, walking, standing, speaking, learning, and emotional/mental processes). Similar to the WHO's (2010) definition, the definition of disability by the ADA also recognizes the interplay between impairments and the inability of individuals with impairments to carry out everyday life tasks the same as individuals without disabilities.

Another piece of U.S. legislation that has defined disability is the Social Security Act (SSA). Based on the SSA, an individual qualifies as having a disability if he/she is not able "to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or expected to last for a continuous period of not less than 12 months" (42 U.S.C. § 423(d)). This differs from definitions provided by the WHO and ADA because it has a specific time frame (e.g., less than 12 months) explicitly built into the definition. Therefore, from the SSA's perspective, certain temporary impairments such as mobility limitations due to broken bones or recent surgeries would not qualify as disabilities because they would not persist past a 12-month period of time. The ADA also excludes temporary impairments as disabilities although they do not provide a specific time frame within their definition. However, in contrast, the WHO's definition is much more inclusive and recognizes that impairments can be either permanent or temporary. Therefore, from the WHO's perspective both a broken limb and a missing limb would qualify as a disability.

Similar to the above definitions, the American Medical Association's (AMA) *Guidelines to the Evaluation of Permanent Impairment* define disability as an impairment (e.g., an alteration of an individual's health status such as the loss or dysfunction of a body part or body system) that affects a person's ability to meet certain personal (e.g., self-care, walking), social (e.g., form relationships, communicate), and occupational activities (Rondinelli, et al, 2008). However, the

AMA differentiates between an impairment and a disability and recognizes that although an impairment is a requirement for a disability, not all impairments meet the criteria for a disability. For instance, an impairment of being partially-sighted in one eye may not be considered a disability for a school teacher (assuming that he/she can carry out personal, social, and occupational without impediment), while the same impairment would almost certainly qualify as a disability for a fighter pilot where 20/20 vision is required for their occupation. Therefore, from the AMA's perspective, disability is very subjective based on the underlying impairment and characteristics of the particular individual it is inflicting.

Although each definition of disability provided by the WHO, ADA, SSA, and AMA differ, they all appear to recognize that there are two main components of disability: 1) a medical component (e.g., some type of impairment in physical or mental bodily functions) and 2) a social component (e.g., impediments in carrying out certain life tasks such as self-care, employment, mobility, and communication). It is important to note that while these four definitions do not represent all of the relevant definitions of disability, they are some of the more widely-cited sources and they provide a good illustration of how disability, a social construct, has been defined by an international organization, the United States government, and the leading national medical professional association. Taken as a whole, the theme that emerges from the four definitions is that disability refers to some type of impairment (whether physical or mental) that impedes a person's ability to carry out daily behaviors and routine activities (e.g., housework, education, employment) in the same way as individuals without impairments. Therefore, the ways in which disability has been defined focus heavily on the social and environmental limitations experienced by those with impairments.

Although there is no exact agreement on how disability should be divided into different types, it is commonly broken down into 5 different categories: 1) physical disabilities; 2) mental

disabilities; 3) sensory disabilities; 4) intellectual disabilities; and 5) speech disabilities (Pacer Center, 2004). Physical disabilities refer to impairments that impede a person's mobility or dexterity or other crucial aspects of daily living (e.g., breathing). These types of disabilities could include paralysis, multiple sclerosis, cerebral palsy, and missing or shortened limbs. Mental disabilities refer to impairments in mental or psychological functioning that impedes an individual's ability to carry out major life events. Examples of mental disabilities include schizophrenia, personality disorders, and mood disorders. Hearing and visual impairments comprise the most common of the sensory disabilities (Pacer Center, 2004). These types of disabilities refer to impairments related to one of the five sensory functions (e.g., sight, hearing, touch, taste, and feeling).

Intellectual disabilities comprise a wide-range of cognitive impairments that are severe, such as Down syndrome and early onset Alzheimer's disease, or more mild impairments such as learning disabilities (e.g., dyslexia, dyscalculia, and dysgraphia). Speech disabilities refer to any impairment related to speech, communication, or language that limit a person's ability to carry out required daily activities. For instance, stuttering, motor speech disorders, and impairments to the cleft lip and palate all fall under the umbrella of speech disabilities. Although this is not an exhaustive or mutually exclusive classification of disability, it provides a broad categorization of the major types of disability and helps to provide a meaningful grouping to conceptualize the larger concept of disability into substantive categories that can be used for classification and analyses.

Prevalence of Disability

General Population Samples. There are several large-scale surveys that provide prevalence estimates of disability among the general population in the U.S. (Brault, 2008;

Centers for Disease Control and Prevention, 2011; Maag, 2006; U.S. Census Bureau, 2009). Some of the largest and most frequently cited of these surveys have been administered by the U.S. Census Bureau, including the National Health Interview Survey on Disability (NHIS-D), the Survey of Income and Program Participation (SIPP), and the American Community Survey (ACS). The NHIS-D is a supplement to the National Health Interview Survey that was administered in 1994 and 1995 (Maag, 2006). Approximately 230,000 U.S. residents responded to survey questions regarding their disability status. Based on the NHIS-D data, Maag (2006) estimates that in 1994-1995 almost 40 million individuals between the ages of 5 and 99, 16.6% of the U.S. population, had some type of disability. Drawing from the WHO's definition of disability, the NHIS-D asked respondents about impairments that resulted in participation restrictions and activity limitations. Based on the survey responses, Maag (2006) estimates that 11.2%, 6.1%, 2.4%, and 1.9% of the U.S. population experienced difficulties being employed, moving around inside their home, going outside their home, and self-care, respectively. A notable proportion of the general public also experienced mental (4.0%), physical (5.1%), and sensory (5.3%) disabilities (Maag, 2006).

The ACS is another survey administered by the U.S. Census Bureau that provides prevalence estimates of disability in the U.S. The ACS is conducted annually and employs a multi-state stratified sample of U.S. residents aged 5 to 99 (U.S. Census Bureau, 2009). Approximately, 2 million respondents partook in the 2009 wave of the survey making the ACS the largest survey regarding disability status that is administered in the U.S (U.S. Census Bureau, 2009). According to the most recent ACS data, an estimated 36 million (12.0%) Americans have a disability. Among the U.S. population between the ages 18 and 64 it is estimated that

approximately 2% have hearing (2.1%) and visual impairments (1.7%).[1] Cognitive disabilities, which include difficulties concentrating, remembering, or making decisions due to physical, mental, or emotional impairments is estimated to affect 4.2% of the adult population. Furthermore, the data indicate that ambulatory disabilities (e.g., physical impairments related to walking, climbing stairs, reaching, and lifting) are experienced by 5.2% of U.S. adults, while 1.8% and 3.5% have difficulties related to self-care and independent living respectively (U.S. Census Bureau, 2009).

One of the most detailed surveys regarding disability status in the U.S. is the Survey on Income and Program Participation (SIPP). The SIPP, which is also administered by the U.S. Census Bureau, is a three-year panel study which included approximately 36,700 households from 2001 to 2004 (Brault, 2008). Based on the most recent SIPP data which was administered between 2001 and 2004, Brault (2008) estimates that 21.3% of the U.S. population aged 15 and older (i.e., approximately 49 million people) have a disability. When further broken down, 14.2% of the total population have severe disabilities while 7.1% have less severe disabilities. There was a prevalence estimate of 6.4% for sensory and speech disabilities (e.g., what the survey defines as "communication" disabilities), with 3.4% for visual impairments, 3.4% for hearing impairments, and 1.1% for speech impairments. Almost 12% of the U.S. adult population has an ambulatory, or physical, impairment, while 3.7% and 5.9% experience severe or moderate activity of daily living limitations respectively. Brault (2008) reports that 7.0% of U.S. residents have some type of mental disability, which includes both psychological and cognitive impairments. In particular, 1.6% have a learning disability.

[1] Percentages were not reported for individuals aged 65 and older due to the fact that disability prevalence increases dramatically with age.

An interesting, and particularly valuable, aspect of the SIPP survey is that it includes prevalence estimates for the percentage of U.S. residents that experience multiple domains or types of disabilities. The SIPP operationalizes disability into three broad types: 1) communication disabilities (e.g., sensory and speech impairments), 2) physical disabilities (e.g., ambulatory and mobility/dexterity impairments), and 3) mental disabilities (e.g., psychological, emotional, and cognitive impairments). Brault (2008) reports that 6.4% of the U.S. adult population (i.e., 14.7 million people) have disabilities that are classified in two of the three types. For instance, 3.2% have a communication and physical disability, 0.3% have a communication and mental disability and 2.9% have a physical and mental disability. Furthermore, approximately 4.7 million U.S. residents aged 15 and older have a disability from all three types. That is, 2.1% of Americans have a mental, physical, and communication disability. These estimates are extremely valuable because they demonstrate that disabilities can be comorbid, or as otherwise stated, that an individual can meet the criteria for two or more distinct disabilities at the same time (e.g., schizophrenia and a hearing impairment; or dyslexia and visual impairment).

In addition to the ACS, SIPP, and the NHIS-D surveys, the Behavioral Risk Factor Surveillance System (BRFSS) is another national-level, large-scale data source that can shed light on the extent of disabilities in the United States (Centers for Disease Control and Prevention, 2011). The BRFSS is a telephone survey of approximately 350,000 U.S. adult residents that is conducted by individual states and compiled nationally by the CDC. According to the 2009 BRFSS data, 18.7% of respondents reported being limited in some type of activity due to physical, mental, or emotional problems. Furthermore, 7.0% of adult respondents reported that they have health problems that require them to use some type of special equipment (e.g., hearing aid, wheelchair) (CDC, 2011). Although the BRFSS differs from the previous surveys because it only asks respondents two, fairly broad questions pertaining to disability, it is

useful for helping to demonstrate that disability is experienced by a notable proportion of the population, and for providing estimates of disability independent of the U.S. Census Bureau.

In sum, these four national-level surveys estimate that between 12% and 21% of the general population has a disability. That is, between 36 and 49 million Americans are estimated to have a disability. These findings demonstrate that while individuals with disabilities comprise a minority population in the U.S., they are not a negligible-sized group. Although there are significant differences between the surveys in terms of sample size, time period of administration, and arguably the most substantial difference, the operationalization of disability, taken as a whole the results across the studies are fairly consistent. In terms of specific disability types and domains, the surveys report that on average, between 5-12% of the U.S. population has a physical disability (e.g., ambulatory impairments), while 4-7% have a mental disability (e.g., cognitive, psychological, and emotional impairments), and 2-6% have a sensory disability (e.g., sensory and speech impairments). One finding that is of particular interest, and that will be explored further in this dissertation, is that there is evidence that a notable proportion of the U.S. population have coinciding disabilities that are independent of each other (i.e., 6.4% for two types and 2.1% for three).

College Population Samples. In contrast to surveys conducted on the general U.S. population, there are very few surveys that estimate the prevalence of disability among students enrolled in colleges and universities in the United States. However, there are two large-scale studies, the Cooperative Institutional Research Program Survey (CIRP) and the National Postsecondary Student Aid Study (NPSAS) that gather information on college students' demographic characteristics and shed light on the extent of disabilities among this population. The CIRP Survey is a national-level study on freshman college students that is sponsored by the

University of California Los Angeles's Graduate School of Education and Information Studies and the American Council of Education (Henderson, 2001). In the fall of 2000, approximately 270,000 incoming first-time, full-time college students from 434 four-year colleges and universities across the United States were administered the CIRP Survey. According to Henderson's (2001) analysis of the data, which was weighted to reflect the 1.1 million freshmen enrolled in baccalaureate colleges and universities in 2000, 6% of all the students reported having a disability. Henderson (2001) reports that among those with disabilities, learning disabilities were the most common (40% of the disabilities), followed by health-related disabilities (15%), visual impairments (16%), and hearing impairments (9%). Orthopedic and speech disabilities comprised 7% and 3% of the disabilities among incoming college freshman in 2000, respectively. Similar to Brault (2008), Henderson (2001) reports that a notable proportion of those with disabilities reported having more than one type of disability. For instance, 13% of freshman with speech impairments also had learning disabilities, while 8% of those with orthopedic impairments had health-related disabilities, and 8% of students with hearing impairments also had learning disabilities.

In addition to the CIRP Survey, the NPSAS also provides estimates of disability prevalence among college students (U.S. Government Accountability Office, 2009). The NPSAS is an annual survey of college students that is sponsored by the U.S. Department of Education. The 2008 NPSAS was administered to random sample of 114,000 undergraduate and graduate students from 1,600 post-secondary institutions in the U.S. The primary purpose of the survey is to gain information on student use of financial aid, but the survey also asks respondents about a wide-range of demographic information, including their disability status. According to the GAO (2009), in 2008 approximately 2 million college students, that is, 10.8% of the total study body, had a disability. The GAO (2009) reports that approximately 24% of the

students with a disability had a mental, emotional, or psychiatric condition, while 19% had attention deficit disorder (ADD). Orthopedic and mobility impairments comprised 15% of the disabilities followed by learning disabilities (9%), hearing impairments (6%) and health-related impairments (6%). The least common disability types among college students were visual impairments (3%) and speech and language disabilities (1%).

In sum, the estimates of disability prevalence among college students from the CIRP and NPSAS data are slightly lower than the estimates of disability within the general population (6-11% vs. 12-21%). However, the discrepancy in prevalence across the samples may be the result of the operationalization of disability in the college studies and not necessarily evidence that individuals with disabilities are underrepresented in post-secondary institutions in comparison to the general public, or that college students are less likely to have disabilities. For instance, the CIRP Survey did not explicitly measure mental or psychological disabilities, the most common disability among college students reported by the NPSAS. Although it is possible that respondents with a mental or psychological disability could have responded affirmatively to having a "health-related" or "other" disability, it is possible that mental disabilities, and therefore total disability status, were underestimated in the CIRP data. The lower prevalence estimates of disability reported from the CIRP and NPSAS data sources may also reflect the positive relationship between age and disability status. For instance, college students may be less likely to report a disability due to their younger age. In addition to the operationalization of disability, other notable differences emerged from the two college-level surveys. For instance, the proportion of respondents that reported orthopedic disabilities (7% vs. 15%) and visual impairments (3% vs. 16%) differed greatly across the two surveys. The largest difference was observed in regards to learning disability. Although the CIRP data indicates that 40% of the college freshman with disabilities had a learning disability, NPSAS data reports that only 9% of

students with disabilities had a learning disability. However, in contrast, the two sources had similar estimates for hearing impairments (6% vs. 9%) and speech and language impairments (1% vs. 3%).

A trend that emerges from the two college-level studies is that a significant proportion of college students have what Wolf (2001) defines as "hidden disabilities." According to Wolf (2001) a hidden disability refers to a disability that is "less visible than other physical, sensory, or mobility impairments and thus may not be as readily apparent to the observer" (p. 387). Wolf (2001) asserts that according to annual trends in the NPSAS data, the number of hidden disabilities such as psychological impairments, learning disabilities and attention deficit disorders among college students has increased substantially since the early 1990's. Data from both CIRP and NPSAS provide support that a significant proportion of students with disabilities have "hidden disabilities." For instance, learning disabilities compromised approximately 40% of the disabilities reported by incoming freshman in 2000 (CIRP; Henderson, 2001), while psychological disabilities (e.g., mental, emotional, and psychiatric impairments) and attention deficit disorders together comprised over 40% of the disabilities reported by undergraduate and graduate students in 2008 (NPSAS; GAO, 2009). Although unhidden disabilities (e.g., physical and sensory impairments) also comprised a significant proportion of the disabilities, it is valuable to recognize the extent of cognitive-related disabilities among college students.

While these two surveys help to shed light on the extent and type of disability among college students, they do have some limitations that are noteworthy. The primary limitation of the CIRP data is that the findings are only generalizable to college freshman attending four-year, baccalaureate-accredited institutions. Because individuals attending two-year programs were not surveyed, the CIRP Survey's prevalence estimate of disability may be slightly below the population parameter for all college students. One reason that this is a possibility is that a

significant proportion of individuals with disabilities attend two-year institutions in comparison to their peers without disabilities (GAO, 2009). Additionally, another limitation, which has already been discussed in more detail above, is that the CIRP Freshman Survey did not include a survey question that explicitly addressed mental, psychological, or emotional disabilities, a type of disability that has been found to be increasing in prevalence among college students since the early 1990's (Wolf, 2001). However, despite these limitations, the two surveys are extremely valuable for demonstrating that college students with disabilities comprise a significant proportion, estimated as high as 11%, of the average student body.

THE EXTENT OF SEXUAL VICTIMIZATION AMONG INDIVIDUALS WITH DISABILITIES

Several researchers have examined the relationship between disability status and sexual victimization in order to determine if individuals with disabilities experience an increased risk when compared to their counterparts without disabilities. These studies include a wide-range of samples ranging from nationally-representative, large-scale samples of adults to state-level, panel studies of adolescent females (Alriksson-Schmidt et al., 2010; Armour, 2008; Brownlie et al., 2007; Brownridge, 2006; Casteel et al., 2008; Cuevas et al., 2009; Harrell and Rand, 2010; Martin et al., 2006; Rand and Harrell, 2010; Smith, 2008; Young et al., 1997). Through their inclusion of both respondents with and without disabilities, these studies are extremely valuable for providing a comparison of sexual victimization risk between the two populations. Table 2.1 provides prevalence estimates, samples sizes, dependent variables, and reference periods from the national-level and state-level studies on sexual victimization among individuals with and without disabilities.

Bivariate Results: National-Level Studies on Adult Samples

One of the first national-level studies that compared the prevalence of sexual victimization of women with (N = 439) and without disabilities (N = 421) was conducted in 1997 by Young and his colleagues. Young et al.'s (1997) gathered their sample by recruiting women from independent living centers and advertisements in local and national news media and disability publications. The authors were interested in examining the relationship between physical disability and lifetime sexual abuse and purposely excluded women with mental or cognitive impairments from the sample. Based on their analysis, Young et al. (1997) report that 39.9% of the women with disabilities reported experiencing a sexual abuse in the past while 37.1% of the women without disabilities were victims. Although the proportion of victims among women with disabilities was slightly higher, they report that the difference between the two groups was not statistically significant. However, they did uncover some evidence that women with disabilities may experience more severe sexual victimization than those without disabilities. For instance, Young et al. (1997) report that women with disabilities experienced sexual abuse for a significantly longer time period than their counterparts without disabilities. It is important to recognize that a notable limitation of this data is that the respondents were not randomly sampled and that the two groups differed significantly on certain demographic characteristics.

In contrast to Young et al.'s (1997) analysis, Brownridge's (2006) study using data from the Canadian General Social Survey (GSS) provides evidence that women with disabilities have an increased risk of sexual victimization. In 1999, the Canadian GSS, which was administered to a random sample of 7,027 women aged 18 and older, asked respondents about their sexual assault victimization by intimate, male-partners that had occurred within a prior five-year period. The Canadian GSS operationalized disability based on the WHO's definition, and therefore

Table 2.1: Extent of Victimization Among Individuals with Disabilities

Author(s) (Date Published)	Number of cases with Disability/ Number of cases without Disability	Dependent Variable	Reference Period	Victimization Prevalence Estimates (%)				
				Type of Disability				
				Any	Physical	Mental	None	Sig. (Comparison Group)
National-Level Studies								
Adult Samples								
Young et al. (1997)	439/421[1]	Sexual Abuse	Lifetime		39.9		37.1	No (No Physical Disability)
Brownridge (2006)	1,092/5,935[1]	Sexual Assault[3]	5 years	.6			.2	Yes (No Disability)
Armour (2008)	Not Available[1]	Rape[3]	Lifetime	19.7			8.2	N/A[4] (No Disability)
Casteel et al. (2008)	1265/5008[1]	Sexual Assault	12 month	.8			.5	No[5] (No Disability)
Rand and Harrell (2009)	Not Available	Rape/Sexual Assault	6 months	.2[6]			.1	Yes (No Disability)
Harrell and Rand (2010)	Not Available	Rape/Sexual Assault	6 months	.2[6]			.1	Yes (No Disability)
Adolescent/Young Adult Samples								
Cuevas et al. (2009)	2,030/274	Sexual Assault	Lifetime			10.2[2]	7.0	No (No Mental Disability)

Table 2.1 (continued)

Author(s) (Date Published)	Number of cases with Disability/ Number of cases without Disability	Dependent Variable	Reference Period	Victimization Prevalence Estimates (%)				
				Type of Disability				
				Any	Physical	Mental	None	Sig.
Alriksson-Schmidt et al. (2010)	899/6294[1]	Rape	Lifetime		19.6		9.4	Yes (No Physical Disability)
State/Province-Level Studies								
Adult Samples								
Martin et al. (2006)	1,443/3,883[1]	Sexual Assault	12 months	1.5			.6	Yes (No Disability)
Adolescent/Young Adult Samples								
Brownlie et al. (2007)	74/168	Sexual Assault	Lifetime		23.0		8.3	Yes (No Physical Disability)

[1] Sample comprised of only female respondents.
[2] Mental category also included those with learning disabilities and ADHD.
[3] Includes only male intimate partner perpetrators.
[4] Statistical significance tests not conducted by authors; author (Scherer) is unable to calculate Z-tests of proportions due to the missing sample sizes for each group.
[5] Significance based on Z-test of proportions ($p<.05$) conducted by author (Scherer).
[6] This percentage is based on age-adjusted rates that that into account the positive relationship between age and disability status.

includes women with both mental and physical impairments. Based on his analysis, Brownridge (2006) reports that although the sexual assault prevalence estimates were below 1% for each group, there was a significantly larger proportion of victims within the disability group. Specifically, he found that there were three times the number of sexual victims in the disabilities group in comparison to the group of women without disabilities (0.6% vs. 0.2%). Although the dependent variable in this analysis was restricted to only male-partner perpetrators, Brownridge's (2006) analysis provides evidence that women with disabilities may be more likely to experience a sexual victimization.

Another study that found evidence that women with disabilities were at an increased risk of partner violence was Armour's (2008) analysis of the 2006 BFRSS data. Using an intimate partner violence module that was administered in seven states, Arkansas, Hawaii, Louisiana, Montana, Nevada, Virginia, and West Virginia, and the Virgin Islands, Armour (2008) compared the lifetime prevalence of rape by an intimate partner among women with and without disabilities. He reports that 19.7% of women with disabilities, which included those with activity limitations due to mental, emotional, or physical impairments, had been a victim of a rape by an intimate partner while 8.2% of the women without disabilities reported being a victim. That is, he found that there were twice as many victims of intimate partner perpetrated rape among women with disabilities. Armour (2008) also reports that when the data was broken down further, this same pattern was observed in each of the eight states in the study. Similar to Brownridge's (2006) findings from a Canadian sample of women, Armour's (2008) results provide support that women with disabilities are more likely to experience a rape victimization by an intimate partner.

Casteel and her colleagues' (2008) study of the National Violence Against Women Survey (NVAWS) also examined the prevalence of sexual victimization among women with

(N = 1,265) and without disabilities (N = 5,008). The NVAWS operationalized disability as serious injuries, health conditions, or chronic mental diseases that interfere with the respondent's normal activities. According to Casteel et al.'s (2008) analysis, less than 1% of the women with and without disabilities experienced a sexual assault within the 12 months prior to the administration of the survey. They report that there were no significant differences in the proportion of sexual assault victims across the two groups. However, despite the fact that the difference in the number of victims between the women with and without disabilities was not statistically significant, Casteel et al. (2008) report that there was a larger raw number of sexual assault victims among women with disabilities (0.8% vs. 0.5).

Another source of data that provides insights into the relationship between disability status and victimization risk is the National Crime Victimization Survey. According to Rand and Harrell's (2009) analysis of the 2007 NCVS data, there was a greater proportion of victims of rape and sexual assault among individuals, both males and females, with disabilities compared to individuals without disabilities. Based on age-adjusted estimates which take into account the positive relationship between age and disability status, Rand and Harrell (2009) report that individuals with disabilities had a victimization rate that was twice the size of the rate for individuals without disabilities (0.2% vs. 0.1%). They found that this same pattern emerged in the 2008 NCVS data and that once again, there was a greater proportion of victims of rape and sexual assault among individuals with disabilities (Harrell and Rand, 2010). An interesting finding from Harrell and Rand's (2010) analysis is that there were no statistically significant differences in the prevalence of sexual victimization across the different types of disability. For instance, there was no evidence that certain types of disabilities (e.g., hearing, vision, ambulatory, cognitive, self-care, and independent living) experienced sexual victimization at higher rates than other types.

Bivariate Results: National-Level Studies on Adolescent/Young Adult Samples

In addition to the studies utilizing samples of adults, studies on adolescent and young adult samples also sheds light on the relationship between disability status and sexual victimization. One of these studies is Cuevas and his colleagues' (2009) analysis of victimization among children with (N = 274) and without (N = 2,030) mental and psychiatric disabilities (e.g., ADHD, conduct disorders, anxiety disorders, and learning disabilities). Cuevas et al. (2009) administered the Juvenile Victimization Questionnaire (JVQ) to a national sample of children aged 2-17 and asked them about their sexual victimization experiences. Based on their analysis, the authors report that 10.2% of the children with mental disabilities experienced a sexual victimization compared to 7.0% of the children without disabilities. Although there was a larger proportion of victims among those with mental disabilities, Cuevas et al. (2009) found that the difference between the two groups was not statistically significant. However, they report that there was a significant difference between the groups for one type of sexual victimization, being flashed or sexually exposed. They found that a greater proportion of children with disabilities experienced a sexual exposure or were flashed than children without disabilities. It is important to note that a primary limitation of this study is that parents acted as proxies for children who were aged 9 or younger which could have resulted in an underestimation of victimization, which is especially possible if the parents were the perpetrators.

Alriksson-Schmidt et al.'s (2010) analysis of the U.S. National Youth Risk Behavior Survey (NYRBS) also examined sexual victimization among adolescents with (N = 899) and without (N = 6,294) disabilities. In 2005, the NYRBS was administered to over 7,000 high school students in the 9th through 12th grades and asked respondents about their disability status, which was operationalized as physical disabilities or long-term health conditions, and experiences with sexual victimization. Alriksson-Schmidt et al. (2010) report that there was a

greater proportion of rape victims among students with physical disabilities than those without disabilities. For instance, they found that 19.4% of the high school students with physical disabilities were raped in comparison to 9.4% of the students without a disability. Otherwise stated, students with disabilities had a rape victimization rate that was almost twice the rate as students without physical disabilities or long-term health conditions.

Bivariate Results: State/Province-Level Studies on Adult Samples

Along with the national-level studies, analyses using data from states and provinces are also valuable for providing insights into the relationship between disability status and victimization risk. Based on Martin and her colleagues' (2006) study utilizing data from North Carolina's BRFSS, women with disabilities were more likely to experience a sexual assault victimization. Unlike Armour's (2008) analysis of national-level BRFSS data, Martin et al.'s (2006) study includes sexual assault by any perpetrator, including both intimate partners and strangers. The 2000-2001 NC-BRFSS was administered to over 5,000 women, of which 1,443 reported having a disability (e.g., physical, emotional, or mental impairments). Martin et al. report that 1.5% of the women with disabilities reported being a victim of a sexual assault compared to 0.6% of the women without disabilities. Similar to several of the previous studies, they found that women with disabilities had a sexual victimization rate twice as high as women without disabilities.

Bivariate Results: State/Province-Level Studies on Adolescent/Young Adult Samples

Another study that provides evidence that individuals with disabilities are at an increased risk of victimization is Brownlie et al.'s (2007) analysis of panel data from a sample of students in Ontario, Canada. Brownlie et al.'s (2007) sample, which is comprised of individuals that were diagnosed with (N = 74) or without (N = 168) language impairments at the age of 5, were asked

at the age of 25 about their experiences with sexual victimization. Brownlie et al. (2007) found that 23% of the respondents with language impairments experienced a sexual assault in their lifetime, while approximately 8% of those without language impairments were a victim of a sexual assault. This finding demonstrates that there were almost three times as many victims among those with language impairments when compared to those without language impairments. Furthermore, although there were too few male victims to estimate male-only prevalence, they found a similar pattern among females-only that was observed in the total sample. For instance, approximately 45% of the females with language impairments reported being a victim compared to 17% of those without language impairments. Similar to findings from the full sample, women with language impairments had a victimization rate that was over twice as high as for those without language impairments.

Multivariate Results: National-Level Studies on Adult Samples

In addition to the bivariate analyses that demonstrate, on average, that there is a greater proportion of victims among individuals with disabilities, researchers have also conducted multivariate analyses to examine the relationship between disability status and victimization risk (Alriksson-Schmidt et al., 2010; Casteel et al., 2008; Cuevas et al., 2009; Martin et al., 2006; Smith, 2008). These studies control for a wide-range of demographic and individual-level characteristics of respondents to examine if disability status is a risk factor for victimization net of other factors. Table 2.2 provides adjusted odds ratios and 95% confidence intervals for the studies, both national-level and state-level, that estimate multivariate analyses on samples of individuals with and without disabilities.

According to their analysis of the NVAWS data, Casteel et al. (2008) report that disability status plays a significant role in influencing sexual victimization risk. Although they

Table 2.2: Adjusted Odds Ratios for Sexual Victimization Risk of Individuals with and without Disabilities

Author(s) (Date Published)	Number of cases with Disability/ Number of cases without Disability	Dependent Variable	Reference Period	Type of Disability	Adjusted Odds Ratio (95% Confidence Interval)	Sig. (Comparison Group)
National-Level Studies						
Adult Samples						
Casteel et al. (2008)	1265/5008[1]	Sexual Assault	12 month	Severe Disability	4.0 (1.5-10.6)	Yes (No Disability)
				Moderate Disability	1.0 (0.3-2.8)	No (No Disability)
Smith (2008)	49,756/170,155[1]	Unwanted Sex[2]	Lifetime	Any	2.4 (2.1-2.7)	Yes (No Disability)
Adolescent/Young Adult Samples						
Cuevas et al. (2009)	2,030/274	Sexual Assault	Lifetime	Mental	1.2 (0.7-1.8)	No (No Mental Disability)
Alriksson-Schmidt et al. (2010)	899/6294[1]	Rape	Lifetime	Physical	1.6 (1.1-2.2)	Yes (No Physical Disability)
State/Province -Level Studies						
Adult Samples						
Martin et al. (2006)	1,443/3,883[1]	Sexual Assault	12 months	Any	4.9 (2.2-10.8)	Yes (No Disability)

[1] Sample comprised of only female respondents.
[2] Includes only male intimate partner perpetrators.

found that there was no significant difference in risk between women without disabilities and those with moderate disabilities (OR = 1.0, 95% CI 0.3-2.8), they found that this was not the case for those with severe disabilities. Casteel et al. (2008) report that individuals with severe disabilities were four times more likely to experience a sexual assault victimization than women with a disability even after controlling for demographic characteristics such as marital status, education, employment status, and age (OR = 4.0, 95% CI 1.5-10.6). Smith's (2008) analysis of the 2005 BRFSS data also provides evidence that women with disabilities experience an increased likelihood of being a victim. According to Smith (2008), women who reported having a physical, emotional, or mental disability were over twice as likely to experience a rape victimization by a male intimate partner than women without disabilities net of a victim's demographic characteristics (OR = 2.4, 95% CI 2.1-2.7).

Multivariate Results: National-Level Studies on Adolescent/Young Adult Sample

According to Cuevas et al.'s (2009) analysis of a sample of youth who were administered the JVQ, adolescents with mental and psychiatric disabilities did not experience an increased likelihood of being a victim. For instance, they report that there was no evidence that the two groups differed significantly in their risk of sexual assault victimization (OR = 1.2, 95% CI 0.7-1.8). However, in contrast to this study, Alkriksson-Schmidt et al. (2010) found an increased likelihood of victimization among high school students with physical disabilities. They report that those with physical disabilities were over one and a half times more likely to experience a rape victimization than students without physical disabilities (OR = 1.6, 95% CI 1.1-2.2). Alkrisson-Schmidt and her colleagues' (2010) study is particularly valuable because they controlled for not only demographic characteristics in their analysis (e.g., year in school, race/ethnicity), but also for some lifestyle characteristics (e.g., drug use and alcohol use).

Multivariate Results: State-Level Studies on Adult Samples

The final study that conducted multivariate analyses to examine the relationship between disability status and victimization risk is Martin et al.'s (2006) analysis of the North Carolina BRFSS. They report that once controlling for respondents' demographic characteristics, women with disabilities were almost five times more likely to report a sexual assault victimization compared to women without disabilities (OR = 4.9, 95% CI 2.2-10.8). Additionally, Martin et al. (2006) found that individuals who had a self-defined disability were over seven times more likely to experience a sexual assault victimization (OR = 7.6, 95% CI 3.1-18.7), while those who reported having activity limitations had odds of victimization almost four times higher than those without limitations in their activities (OR = 4.2, 95% CI 1.5-11.5). Furthermore, women with cognitive impairments, defined as problems with learning, remembering, or concentrating, were five times more likely to be sexually assaulted than those without cognitive impairments (OR = 5.2, 95% CI 2.0-13.6). The only disability group that did not experience a statistically significant likelihood of being a victim were individuals who reported using special equipment (OR = 3.5, 95% CI 0.5-23.0).

SUMMARY OF VICTIMIZATION AMONG INDIVIDUALS WITH DISABILITIES

Based on the results from these studies, it appears that a positive relationship exists between disability status and victimization risk. For instance, from the ten bivariate-level analyses conducted on samples of individuals with and without disabilities, only two of the studies failed to find a statistically significant difference between the proportions of victims in each of the groups. Furthermore, all ten of the studies, whether statistically significant or not, found that as a group, individuals with disabilities had a larger percentage of victims when compared to those without disabilities. Secondly, the multivariate analyses also provide support

that individuals with disabilities are at an increased risk of sexual victimization. For instance, of the five studies that examined risk while controlling for the demographic and individual-level characteristics of the respondents, only one study failed to find that individuals with disabilities were more likely to be victims. Moreover, some of the analyses report that individuals with disabilities may experience a heightened risk that could be as high as four times that of individuals without disabilities. Taken as a whole, the results provide supportive evidence that disability status is a significant risk factor for sexual victimization.

The various studies also demonstrate that that relationship between disability status and victimization risk exists across the lifecourse. For instance, Cuevas et al.'s (2009) study found that children aged 2 to 17 with mental disabilities were more likely to experience a sexual victimization (e.g., sexual exposure), while Alriksson-Schmidt et al. (2010) report that high school students with physical disabilities were more likely to report a rape victimization. Among a sample of young adults, Brownlie and his colleagues (2007) also found that disability, operationalized as language impairments, was related to an increased risk of sexual victimization. Furthermore, the studies on samples of adults provide evidence of the same pattern and that there is a greater proportion of victims among individuals with disabilities (Armour, 2008; Brownridge, 2006; Harrell and Rand, 2010; Martin et al., 2006; Rand and Harrell, 2009). As a whole, the research demonstrates that disability status is a risk factor for victimization across a wide-range of age groups including children, high school students, young adults, and adults aged 18 and older.

Although this body of research is valuable for establishing that disability status and victimization risk are related, no published studies examined disability as a risk factor for sexual victimization among college students. Given the fact that college students with disabilities comprise a significant proportion of the average student body, and past research indicating that

college students experience an increased risk of sexual and stalking victimization when compared to the general population, there is a gap in the research that needs to be filled. The purpose of this dissertation is to address this limitation in past research. The results from this dissertation will provide a greater understanding of the relationship between disability status and victimization risk among a national sample of college students with and without disabilities.

CURRENT STUDY

The purpose of this current study is to examine the relationship between college students' disability status and sexual and stalking victimization risk from within the lifestyles-routine activities framework. There are several theoretical reasons for why the lifestyles-routine activities framework would provide a valuable means for examining the effect of disability on the likelihood of victimization, which this study hypothesizes to be a direct relationship. Individuals with disabilities may be viewed by potential offenders as more suitable or attractive targets than individuals without disabilities. Based on Finkelhor and Asdigian's (1996) extension of the lifestyles-routine activities framework, individuals with physical, sensory, or cognitive impairments may be perceived by offenders as having higher target vulnerability (i.e., less able to resist or deter offenders) due to their physical or mental characteristics. For example, an individual with a visual impairment may be viewed by an offender as being an easier sexual assault target than someone without a sight impairment.

Finkelhor and Asdigian's (1996) description of vulnerable targets, which was originally developed to explain victimization of youth, applies very fittingly to individuals with disabilities as well. For instance, they state that "prototypical risk factors in the vulnerability category would be attributes like small size, physical weaknesses, emotional deprivation, or psychological problems" (p. 6). Each of the attributes listed by Finkelhor and Asdigian (1996) could be

symptoms or characteristics of certain disabilities. Furthermore, individuals with disabilities may be victimized because they have high levels of target antagonism (i.e., characteristics that trigger some type of negative emotion within an offender). An interesting aspect of target antagonism is that Finkelhor and Asdigian (1996) explicitly mention disability status as a risk factor under this element of target congruence. For instance, they assert that individuals with disabilities may be perceived as an antagonistic target by those responsible for their care. Therefore, certain characteristics that individuals with disabilities may possess could influence the likelihood that an offender would perceive them as suitable targets.

There are several ways that this dissertation aims to fill the void in the past research. One strength is that it utilizes a large sample of approximately 21,000 undergraduate college students from post-secondary institutions across the United States. A sample of this size is beneficial because it ensures that there are enough victims of sexual and stalking victimization, and those with disabilities, to conduct in-depth, multivariate analyses. Another strength of this current research is that the sample includes both males and females. Unlike much of the past research which utilized female-only samples, both in regards to disability status and sexual and stalking victimization of college students, the results of this study will be generalizable to both female and male students. Another way that this current study extends upon past research is that it examines both sexual and stalking victimization. Although there have been past studies on stalking victimization among college students (see Fisher et al., 2002; Mustaine and Tewksbury, 1999), no studies have examined the relationship between disability status and stalking victimization. Due to this gap in the research, nothing is known about whether disability is a risk factor for stalking victimization as it appears to be for sexual victimization.

However, despite this gap, there are theoretical justifications that can support the hypothesis that disability status is related to an increased risk of stalking victimization. For

instance, from an offender's perspective, one of the key elements of stalking involves instilling fear within the victim. Therefore, from a target selection position, individuals with disabilities may be perceived as more suitable targets because they might experience higher levels of fear or more psychological distress from being stalked. For example, individuals with mobility disabilities may experience a greater level of fear from being stalked because their impairment influences their ability to quickly retreat if they feel in danger. Similarly, offenders may select individuals with mental disabilities as their victims because of the belief that if the offense is reported, the victim's claim will not be believed or taken as seriously. For instance, a stalking complaint by an individual with schizophrenia may be viewed with more skepticism by officials than a complaint made by an individual without a mental disability.

There are also several strengths of this current study that relate directly to the use of the American College Health Association's National College Health Assessment-II Survey. The NCHA-II survey includes a wide-range of detailed questions related to college students' health habits, risky behaviors, dating practices, and victimization experiences which allow this study to utilize refined measures for each of the concepts from the lifestyles-routine activities framework (e.g., exposure, proximity, target attractiveness, and guardianship). Furthermore, one of the greatest strengths of the current study is that the survey instrument includes a variety of different questions that allow for a detailed operationalization of disability. For instance, respondents were asked whether they had different types of physical, sensory, learning, and mental disabilities and impairments. Because each of the questions related to disability status were single items, this current study is able to operationalize disability in a variety of different ways including whether or not the respondent had any disability, the type of disability reported by the respondent, and how many disability types the respondents had. This is beneficial because it allows for a deeper exploration of the role that disability status has on influencing victimization

risk. For example, victimization risk may be not only a function of having a disability, but also having a particular type of disability, or more than one disability type.

As discussed above, from a theoretical perspective there is reason to hypothesize that disability type may influence an individual's risk of sexual and stalking victimization. For instance, students with a physical disability may be viewed as more vulnerable targets by potential offenders because they are perceived to be less able to provide self-guardianship. For example, with all other characteristics equal, individuals with mobility disabilities may be less likely to protect themselves in the same way as individuals without mobility disabilities (e.g., physically fight off offender, retreat quickly from high risk situation). On the other hand, types of cognitive impairments, which includes both learning and mental disabilities, may also be related to an individual's risk of sexual and stalking victimization. For instance, due to their cognitive impairments, individuals with mental and learning disabilities may have an increased risk of victimization because they might act in a certain way that antagonizes potential offenders.

Examining the number of disability types is also valuable from the perspective of the lifestyles-routine activities framework. For instance, a student with multiple types of disabilities (e.g., physical, mental, and learning) may be viewed as a more vulnerable target by potential offenders than students with only one disability type or no disability. Drawing from the examples above, students with two or more types of disability (e.g., physical/mental, physical/learning, learning/mental, or physical/mental/learning) may experience an elevated risk compared to students with only one type of disability because they could be perceived by offenders as being more severely impaired and therefore less able to protect themselves. In addition to examining the effect of having any disability on sexual and stalking victimization risk, being able to compare risk of victimization across disability types and the number of disability types within the same study is particularly valuable because very little prior research

exists on the subject and it is unclear whether one particular disability type or number of types is associated with a higher level of risk.

In sum, this dissertation aims to fill the gap in the research by utilizing the lifestyles-routine activities perspective to examine the relationship between disability status and sexual and stalking victimization risk among a national-sample of college students. By controlling for known risk factors of victimization among college students (e.g., alcohol consumption, drug use, the number of sexual partners), this study aims to examine if disability status has an effect on victimization risk net of routine activities and lifestyle characteristics. If disability status is found to have no significant effect on victimization risk once controlling for routine behaviors, it could demonstrate that the findings from past studies were the result of misspecified models.

Chapter 3

RESEARCH METHODS

This chapter discusses the research methodology utilized to examine the relationship between disability status and sexual and stalking victimization among college students. Topics addressed in this chapter include: the American College Health Association data source, sample characteristics, the operationalization of dependent, independent, and control variables, and the statistical analyses used to examine the relationship. The methods applied, in particular the operationalization of the lifestyles-routine activities concepts—exposure, proximity, target attractiveness, and guardianship—were drawn heavily from past studies on college students and tests of the analytical framework. Due to the utilization of a national-level, large-scale sample of college students, and a survey instrument that includes detailed measures of routine behaviors and disability status, this study is able to explore the relationship between measures of disability and victimization risk while controlling for known risk factors of sexual and stalking victimization (e.g., alcohol consumption, drug use, risky sexual practices). The inclusion of measures of lifestyle characteristics and routine behaviors and disability within the same multivariate models will allow for testing whether individuals with disabilities are at an increased risk of victimization like prior research suggests, or if the relationship between disability and risk observed in past studies was the result of model misspecification due to the failure to control for routine activities.

NATIONAL COLLEGE HEALTH ASSESSMENT-II

The data source utilized in this study came from the American College Health Association's (ACHA) National College Health Assessment II (NCHA-II). The NCHA-II is a

biannual survey that has been administered to college students attending 2-year and 4-year post-secondary institutions of higher education (IHE) across the United States since the Fall of 2008. The NCHA-II is an updated version of the original NCHA survey which was administered biannually between the Spring 2000 and Spring 2008 academic school years. The original ACHA-NCHA survey, which was launched in a 1998 pilot study, was designed to provide college administrators and college health service providers with detailed information on students' health habits and behaviors. The ACHA-NCHA survey instrument construction was greatly influenced by several other national-level surveys of college students including the National College Health Risk Behavior Survey, the Core Alcohol and Drug Survey, and the College Alcohol Study (ACHA, 2004).

The NCHA-II is a valuable data source to utilize for examining the relationship between disability status, routine activities, and victimization among college students because it includes almost 300 survey items that measure a wide-range of student behaviors and characteristics. According to ACHA (2004), the NCHA was designed to gather information on seven subject areas: 1) health, health education, and safety; 2) alcohol, tobacco, and drugs; 3) sex behavior, perceptions, and contraception; 4) weight, nutrition, and exercise; 5) mental and physical health; 6) impediments to academic performance; and 7) demographics. ACHA (2004) asserts that the NCHA and NCHA-II surveys comprise the largest comprehensive dataset regarding the health of college students. These features make this survey ideal for testing the lifestyles-routine activities theory and allow for the creation of refined measures of the four theoretical concepts and disability status.

The NCHA-II is a proprietary dataset under the auspice of the American College Health Association and is not publically archived. ACHA granted access to the Fall 2008 dataset after the author received approval for secondary data analysis from the University of Cincinnati's IRB

and permission from ACHA's program office (Mary Hoban, personal communication) which required completing a data use application form. Upon approval by the ACHA program office, a dataset was provided that stripped identifying markers for students and participating institutions to maintain the anonymity of respondents.

Sample Design

Institutions of higher education annually participate in the NCHA-II survey through self-selection. That is, only colleges and universities that purchase the survey from ACHA are included in the sample. Each institution chooses their own sampling design based on the institution's needs, the size of the institution, and the desired sample size. Although the institutions have freedom over selecting their own particular sampling design, ACHA (2004) strongly encourages the participating IHE's to utilize a probability sampling design (e.g., simple random sample, systematic sample, stratified random sample, or cluster sample). According to ACHA (2004), only institutions that use a probability sample and take a random sample of students, randomly select classrooms of students, or sample the entire population of students, which is typically done for institutions with less than 1,000 students, are included in the national database; institutions that use nonprobability sampling are excluded from the database. Therefore, the data utilized in this study include only respondents that were selected for inclusion in the survey based on some type of probability sample.

Although institutional participation in the NCHA-II is based on self-selected and not random sampling, the participating post-secondary institutions appear to differ greatly in institutional characteristics. For instance, the wave of the data used in this survey includes public and private institutions from all regions of the United States (e.g., Northwest, Midwest,

Table 3.1: Institutional Characteristics (N=40)

	N	%
Type of Institution		
Public	22	55.00
Private	18	45.00
Location of Campus		
Northeast	13	32.50
Midwest	10	25.00
South	12	30.00
West	5	12.50
Campus Size(in students)		
2,500 or less	7	17.50
2,500 – 4,999	9	22.50
5,000 – 9,999	6	15.00
10,000 – 19,999	10	25.00
20,000 or greater	8	20.00
Campus Setting		
Very large city (500,000+)	6	15.00
Large city (250,000 – 499,999)	4	10.00
Small city (50,000 – 249,999)	16	40.00
Large town (10,000 – 49,999)	7	17.50
Small town (2,500 – 9,999)	5	12.50
Rural community (less than 2,500)	2	5.00
Carnegie Classification		
Associates colleges	3	7.50
Baccalaureate colleges	10	25.00
Masters colleges and universities	7	17.50
Research institutions	20	50.00

South, and West), and from cities of varying sizes (e.g., ranging from less than 2,500 to more than 20,000) and settings (e.g., rural to very large urban cities). Table 3.1 provides institutional-level characteristics for the 40 IHE's that participated in the Fall 2008 wave of the survey. Approximately half of the participating institutions were public schools (55%). Between 25% and 33% of the campuses were located in the Northeast, Midwest, or South, while approximately 13% of the institutions were located in the West. The size of the student population also differed greatly across the institutions with approximately 20% of institutions falling into each of the five size groupings (e.g., 2,500 or less; 2,500-4,999; 5,000-9,999; 10,000-19,999; 20,000 or more).

The majority of the institutions (40%) were located in small cities (50,000-249,999 population) while rural institutions only comprised 5% of the sample. Half of the institutions were classified as research institutions and a quarter of the schools were baccalaureate colleges.

Survey Instrument

The data were obtained from the Fall 2008 wave of the NCHA-II survey. This wave of the survey included a total sample size of 26,685 students from 40 post-secondary institutions across the U.S. According to ACHA, the NCHA-II, which includes approximately 300 survey items that fall under 65 individual survey questions, takes approximately 20 to 35 minutes for participants to complete (see Appendix A for the NCHA-II survey instrument). In 2008, the NCHA-II had two main modes of administration, paper-based surveys and web-based surveys. The paper-based surveys were most commonly administered to randomly selected classrooms, while web-based surveys were typically sent through students' institutional email addresses along with a letter of invitation to participate in the survey (see ACHA's User Manual for letters of invitation and non-response follow-up templates; http://www.acha-ncha.org/docs/ACHA-NCHA_USERS_MANUAL.pdf).

The overall response rate for the Fall 2008 was 27%. Five of the institutions (N = 2,321) utilized paper-based surveys which yielded a response rate of 63%. The remaining 35 institutions (N = 24,364) administered the survey via the internet which resulted in a response rate of 22%. An interesting feature of the NCHA-II survey that is particularly relevant to the research questions addressed in this dissertation is that ACHA provides recommendations and instructions for administering the survey to students with visual impairments (see Appendix B for ACHA's Guidelines for Blind or Vision Impaired Students). These instructions are

beneficial for helping to ensure that selected students with visual impairments are able to be represented in the sample and not excluded solely because of their disability.

Sample Size

The current analysis restricted the sample to only undergraduate students aged 18 to 25. This restriction resulted in a sample size of 21,457 students. Additionally, students who had missing values on seven or more of the survey items used to operationalize disability, or those who reported having seven or more disabilities were excluded from the analysis and removed from the final sample.[2] This process resulted in the final sample size of 20,486 respondents. There are two primary theoretical explanations for restricting the data in this manner. First, this current study is interested in examining victimization risk among a traditional college population, particularly young adults. However, the original age range of the sample was 18 to 99, with approximately 10% of the respondents 26 years old or older. Due to the fact that lifestyle characteristics and routine activities vary across age groups and education levels (Hindelang et al., 1978), it is a sound decision from a theoretical perspective to exclude older students, graduate students, and non-degree seeking from this analysis. For instance, as the age of the student increases, it becomes less likely that they are going to participate in certain behaviors that are associated with college enrollment such as attending fraternity/sorority parties, binge drinking, and living in campus housing.

Second, older students were excluded from the analysis due to the positive relationship that exists between age and disability status. For instance, students aged 60 and older are more likely to have disabilities, particularly those that result from aging (e.g., mobility/dexterity,

[2] Respondents who reported having seven or more disabilities were excluded out of concern over measurement error. Although it is certainly possible that an individual could have multiple disabilities, this author felt that it was unlikely that an individual would have more than six disabilities and be attending an IHE.

visual and hearing impairments), including them in the sample could result in an overestimation of disability prevalence among the college population that is traditionally conceptualized as young adults. Given the large size of the original sample and the theoretical rationale, restricting the sample to undergraduate students and those aged 18 to 25 should not produce any problems regarding cell frequencies or model estimation. Therefore, based on this sample restriction, the results in this study are only generalizable to the population that falls within my operationalization of traditional college students (e.g., 18 to 25 year olds pursuing associate or baccalaureate degrees from two-year and four-year post-secondary institutions). According to the Department of Education (2009), approximately 60% of all undergraduate students enrolled in post-secondary institutions in the U.S. are aged 18 to 24. This finding provides support that the age restriction employed in this study is representative of the average college student population.

Sample Characteristics

Table 3.2 includes sample characteristics for the full sample (N = 20,486) and sub-samples of students with (N = 3,064) and without disabilities (N = 17,422). The sample characteristics presented in the table include individual demographic (e.g., age, sex, race, and sexual orientation) and school-related (e.g., year in school, enrollment status, GPA, and university type) characteristics. The mean age of the full sample was 19.6 years old. Approximately 70% of the sample was comprised of female students and the majority of the respondents were white (77%). As would be expected, less than 7% of the sample reported being homosexual, bisexual, or unsure about their sexuality. In regards to the school-related characteristics, there was a larger proportion of freshmen and sophomores (57%) in the sample than upperclassman (43%). Furthermore, the majority of the respondents were enrolled full-time

Table 3.2: Sample Characteristics

	Total Sample N = 20,486	Disability N = 3,064	Without Disability N = 17,422
	N (%)	N (%)	N (%)
Individual-Related Characteristics			
Age (Mean/SD)	19.63 (1.56)	19.88 (1.69)	19.59 (1.53)*
Sex			
Male	6328 (30.89)	960 (31.33)	5368 (30.81)
Female	14158 (69.11)	2104 (68.67)	12054 (69.19)
Race			
White	15437 (77.07)	2524 (83.97)	12913 (75.85)*
Non-White	4593 (22.93)	482 (16.03)	4111 (25.15)*
Sexual Orientation			
Heterosexual	19171 (93.72)	2661 (87.10)	16510 (94.89)*
Homosexual, Bisexual, or Unsure	1284 (6.28)	394 (12.90)	890 (5.11)*
School-Related Characteristics			
Year in School			
Underclassmen (freshmen and sophomores)	11645 (56.59)	1642 (53.17)	10003 (57.19)*
Upperclassmen (juniors and seniors)	8934 (43.41)	1446 (46.83)	7488 (42.81)*
Enrollment Status			
Full-Time	19824 (97.03)	2909 (94.94)	16915 (97.40)*
Part-Time	606 (2.97)	155 (5.06)	451 (2.60)*
GPA			
A's and B's	17162 (83.77)	2422 (78.79)	14740 (84.65)*
C's, D's, and F's	2236 (10.91)	507 (16.49)	1729 (9.93)*
No GPA[1]	1089 (5.32)	145 (4.72)	944 (5.42)
University Type			
2 year	1518 (7.38)	309 (10.01)	1209 (6.91)*
4 year	19061 (92.62)	2779 (89.99)	16282 (93.09)*

[1] Incoming freshman without University GPA's

* $p < .05$

(97%) and attending four-year institutions (93%). Approximately 84% of the sample had above average GPAs, while 11% had average or below-average grades and 5% had no university GPA.

Sample characteristics for students with and without disabilities were also provided in Table 3.2 (see Independent Variable section below for the operationalization of disability).

Independent samples T-tests and Z-tests of proportion were conducted to examine if the two groups differed significantly across the various demographic and school-related characteristics. Based on these analyses, the only characteristics that did not differ significantly across the two groups were sex and no GPA. Some of the most notable differences between the students with and without disabilities was observed for sexual orientation (87% heterosexual vs. 95%), race (16% nonwhite vs. 25%), and grade point average (16% vs. 10% for average or below average grades). Although the significance tests indicate that the two groups differ significantly on the majority of the demographic characteristics, the differences are only large for these three individual- and school-related characteristics.

Note on External Validity

Although Chapter 5 provides a detailed discussion of the limitations of this analysis, there is one potential limitation that is worth noting prior to the presentation of the results. This limitation concerns the external validity of the results due to two distinct issues: 1) the low response rate for surveys administered via the web, and 2) sample characteristics that differ from the average IHE in the United States. However, as will be discussed below, there are methodological arguments that can be made to counter these concerns and provide evidence that the results can be generalized to college students attending postsecondary institutions in the U.S.

Due to the fact that the web-based surveys were associated with a lower response rate than the paper-based surveys (22% compared to 63%, respectively), it is possible that concerns could arise pertaining to the representativeness of the web-based data. However, while the rate is less than ideal, research from the field of survey methodology provides evidence that the lower response rate associated with the web-based portion of the NCHA-II survey does not equate to unrepresentative or biased data. For instance, based on their experiment designed to compare

telephone and web surveys, Fricker, Galesic, Tourangeau, and Yan (2005) report that although the response rate for their web survey was significantly lower than their telephone survey (52% compared to 98%, respectively), there was no evidence that the two groups differed significantly in terms of demographic characteristics (e.g., sex, race, education, and age). That is, despite quite dramatic differences in the response rate, Fricker and his colleagues found that the composition of the respondents was very similar across the two samples. Furthermore, although the response rate for the NCHA-II web-based surveys may seem to be particularly low, the rate is actually very comparable to, if not slightly higher than, other web-based surveys (Cook, Heath, and Thompson, 2000; Dillman et al. 2009).

In addition to evidence from past research, results from this study also provide evidence that the data are representative of college students in the United States. For instance, prevalence estimates for the different types of victimization and results concerning the significance of the lifestyles and routine activities measures are all consistent with past research on sexual and stalking victimization among college students (see Chapter 4 for full discussion of results). Moreover, it is important to note that the low response rate for the surveys administered via the internet might not be entirely unexpected once it is taken into account that the respondents may not have been provided incentives to participate and that they were most likely contacted through their official university email address. For instance, the lower response rate could be the result of time constraints among this population and the fact that an invitation to participate in a survey may not stand out against the backcloth of daily emails from the university/college. Given these types of factors, differences between the response rates across the modes of survey administration (i.e., web and paper) would be anticipated; particularly due to the fact that the paper-based surveys were administered in the classroom during official class meeting times. To take into account the possibility that the difference in response rates across the paper-based and

web-based surveys could influence the results, each of the multivariate analyses include a control for mode of survey administration.

Another potential external validity concern from this study is that the sample characteristics for the Fall 2008 ACHA data differ in some important respects from the 2008 data presented in the Department of Education's (2009) *Digest of Education Statistics*. In particular, the sample utilized in this study is overrepresented with full-time students who are seeking four-year degrees and living on campus. Although this difference may raise concerns, it is not unexpected given the target population for the ACHA survey. For instance, as presented above in Table 3.1, out of the 40 postsecondary institutions that participated in the Fall 2008 survey, 50% (N = 20) were research institutions, while 40% (N = 17) were baccalaureate and masters colleges or universities. However, although this sample is only comprised of 7.5% (N = 3) Associates colleges, the Department of Education (2009) data indicates that 38% of the post-secondary institutions in the U.S. are two-year institutions. Therefore, it appears that the institutions that participate in the NCHA-II survey (i.e., the target population) may resemble what is conceptualized as "traditional" colleges or universities (e.g., institutions with sports teams, a Greek system, student housing, organizations and clubs, etc). Consequently, the results from this study may be best generalized to students attending these types of institutions and not non-traditional students who are attending smaller-scale, commuter schools.[3]

In sum, although the low response rate and divergent sample characteristics may raise some concerns over the external validity of this study's results, past research and results from this analysis indicate that there are no reasons to expect that either of these issues should render the findings ungeneralizable. In particular, the results should help shed light on the risk factors

[3] The larger proportion of women in the sample could also raise concerns over the generalizability of the results to both male and female college students. However, given the fact that females comprise approximately 60% of the total student body (U.S. Department of Education, 2009), the difference in proportion of male and female respondents is not as great as it would appear given a 50/50 distribution of students.

for victimization among traditional undergraduate students attending post-secondary institutions in the United States.

DEPENDENT VARIABLES

Four dependent variables are utilized in this analysis. These include: *sexual assault, rape, sexual touch without consent,* and *stalking*. Table 3.3 presents descriptive statistics on the four dependent variables including their scales, means, standard deviations, and ranges.

Three sexual victimization dependent variables are utilized. The first is s*exual assault victimization* which is a composite measure of three survey questions that asked if within the last 12 months: 1) was the respondent sexually touched without his/her consent; 2) was sexual penetration attempted (vaginal, anal, oral) without the respondent's consent; or 3.) was a respondent sexually penetrated (vaginal, anal, oral) without his/her consent (NCHA-II survey question #5; Cronbach's alpha = .659). Each of the original survey items were dichotomous (i.e., respondents could answer yes or no). If a respondent reported having experienced any one of the three sexual victimizations (e.g., sexual touch without consent, attempted rape, and completed rape) he/she was coded as a sexual assault victim. The *sexual assault victimization* variable was dichotomized (0 = no, 1 = yes) and reflects a sexual victimization measure that is broader in scope yet consistent with past studies on sexual violence among college students (Cass, 2007; Fisher et al., 1999; Krebs et al., 2009; Mustaine and Tewksbury, 2002). Due to the possibility that a composite measure of sexual assault victimization may mask differences in the opportunity structure for victimization between sexual touch without consent and rape, individual measures of these items were also analyzed. Both the *sexual touch without consent* and *rape* measures

Table 3.3: Dependent and Independent Variables

Variables	Scale	Mean	S.D.	Range
Dependent Variables				
Sexual Assault Victimization (Cronbach's Alpha = 0.66)	(0 = No; 1 = Yes)	0.09	0.28	0 – 1
Rape Victimization	(0 = No; 1 = Yes)	0.03	0.17	0 – 1
Sexual Touch Without Consent Victimization	(0 = No; 1 = Yes)	0.08	0.27	0 – 1
Stalking Victimization	(0 = No; 1 = Yes)	0.08	0.26	0 – 1
Independent Variables				
Disability Variables				
Any Disability	(0 = No; 1 = Yes)	0.15	0.36	0 – 1
Type of Disability[1]				
Physical	(0 = No; 1 = Yes)	0.04	0.19	0 – 1
Mental	(0 = No; 1 = Yes)	0.06	0.25	0 – 1
Learning	(0 = No; 1 = Yes)	0.07	0.26	0 – 1
Number of Disability Types[1]				
One Type	(0 = No; 1 = Yes)	0.13	0.33	0 – 1
Two or More Types	(0 = No; 1 = Yes)	0.02	0.14	0 – 1
Lifestyles-Routine Activities Variables				
Exposure				
Alcohol Consumption				
Binge Drinking	(0 = No; 1 = Yes)	0.35	0.48	0 – 1
Alcohol Use	(0 = No; 1 = Yes)	0.67	0.47	0 – 1
Risk-Taking Behaviors				
Marijuana Use	(0 = No; 1 = Yes)	0.16	0.37	0 – 1
Serious Drug Use (Cronbach's Alpha = 0.86)	(Continuous)	0.02	0.13	0 – 6
Number of Sexual Partners	(Continuous)	1.35	2.80	0 – 99

Table 3.3 (continued)

College- and School-Related Activities				
Fraternity/Sorority Membership	(0 = No; 1 = Yes)	0.08	0.27	0 - 1
Athletic Participation (Cronbach's Alpha = 0.32)	(0 = No; 1 = Yes)	0.35	0.48	0 - 1
General Leisure Activities				
Volunteers	(0 = No; 1 = Yes)	0.37	0.48	0 - 1
Proximity				
Housing[2]				
Lives with Parents/Guardians	(0 = No; 1 = Yes)	0.12	0.32	0 - 1
Off-Campus Housing	(0 = No; 1 = Yes)	0.26	0.44	0 - 1
Employment	(0 = No; 1 = Yes)	0.56	0.50	0 - 1
Target Attractiveness				
Relationship Status	(0 = No; 1 = Yes)	0.44	0.50	0 - 1
Sexual Orientation	(0 = Heterosexual; 1 = Not Heterosexual)	0.06	0.24	0 - 1
Guardianship				
Received Crime Prevention Information (Cronbach's Alpha = 0.82)	(0 = No; 1 = Yes)	0.75	0.43	0 - 1

[1] Reference group: Students without disabilities.
[2] Reference group: On-campus housing.

are dichotomous (0 = no, 1 = yes). The *rape* measure was created by combining attempted and completed rape; any respondent that reported experiencing an attempted or completed penetration without consent was coded as a victim (Cronbach's alpha = .765).

The fourth dependent variable examined in this current study is *stalking victimization*. The NCHA-II question on stalking is a single-item measure that asked respondents if within the last 12 months: "were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated emails/phone calls?" (#5). This variable is dichotomous and a respondent could answer either no (0) or yes (1). The measure of stalking utilized in this analysis has elements of both self-definition and behaviorally-specific wording because it asks respondents if they been a victim of stalking, while providing some examples of pursuit behaviors (e.g., perpetrator waiting for victim, repeated contact). Based on this wording of the survey question, stalking in this study is operationalized more closely to Mustaine and Tewksbury's (1999) and Jordan et al.'s (2007) definition of stalking than Fisher et al.'s (1999) which includes concerns over the respondents' fear and concern for their safety. Although past research may indicate that self-defined measures of stalking underestimate the extent of stalking victimization, it does not appear that such measures result in an over-reporting of stalking victimization by respondents (see Table 1.1 for stalking prevalence and operationalization of stalking from past studies on national-level, large-scale studies on college students). Therefore, the operationalization of stalking should produce a valid measure of this type of victimization.

INDEPENDENT VARIABLES

Disability Status

In this analysis, there are three different ways that disability status is operationalized: 1) *any disability*; 2) *type of disability*; and 3) *number of disability types*. The operationalization of

disability in this study was drawn specifically from widely-accepted definitions of disability, as well as, past research that has operationalized and analyzed the concept (see Chapter 2 for disability definitions and categorizations by types). Operationalizing disability in these different ways will allow this study to explore the multifaceted relationship between disability status and victimization risk. Table 3.3 provides descriptive statistics (e.g., scale, mean, standard deviation, and range) for the three disabilities variables.

The first disability status variable is *any disability* which is a composite measure of 12 survey items regarding a respondent's mental and physical health (see Appendix D for original survey questions used to operationalize disability). The 12 impairments and disabilities from the NCHA-II that were utilized to create the *any disability* measure, as well as the other two disability variables, include: 1) mobility/dexterity disability; 2) deaf/hard of hearing; 3) partially sighted/blind; 4) speech or language disorder; 5) attention deficit and hyperactivity disorder (ADHD); 6) learning disability; 7) psychiatric condition; 8) bipolar disorder; 9) obsessive compulsive disorder (OCD); 10) phobias; 11) schizophrenia; and 12) an other mental health condition (#31 and #65). *Any disability* is a dichotomous variable (0 = no, 1 = yes) and respondents were coded having a disability if they reported having at least one of the twelve disabilities listed above. This disability measure allows this study to answer the broad research question, does having any disability influence one's risk of victimization? This measure is valuable for establishing if disability status of any kind has an effect on sexual and stalking victimization risk. However, the other two measures of disability may shed more light on the nature of the relationship between disability status and risk of victimization.

Type of disability is the second way that disability status is operationalized in this study. The 12 survey items that comprise the *any disability* measure were broken down into three broad types of disabilities: 1) physical, 2) learning, and 3) mental disabilities. Four impairments made

up the *physical disability* group: mobility/dexterity disabilities, visual and hearing impairments, and speech and language disorders (N = 761). Although visual and hearing impairments are often classified as sensory disabilities and speech and language disorders as speech disabilities, due to fact that both having a disability and being a victim are rare phenomena, there were not enough cases to examine these disabilities as separate groups (e.g., physical, sensory, and speech disabilities). However, because mobility/dexterity disabilities, speech disorders, and visual and hearing impairments all result in physical activity limitations (e.g., self-care, communication, leaving the home), they are complementary and can combined into one broad group.

The *learning disability* group was comprised of two impairments, learning disabilities and attention deficient hyperactivity disorder (ADHD) (N = 1,461). Although learning disabilities and ADHD are distinct impairments, these two disabilities were combined due to the similarity of symptoms (e.g., attention problems, learning difficulties) and high comorbidity. The final disability group, *mental disability*, included psychiatric conditions, bipolar disorders, obsessive compulsive disorders, phobias, schizophrenia, and other mental health conditions (N = 1,308). Respondents were coded as having one of the disability types if they had a disability in the group. The different disability types were not mutually exclusive; for instance, a respondent with a speech disorder and OCD would be coded as having a physical disability and a mental disability. The *type of disability* measure is comprised of three dichotomous dummy variables (e.g., *physical disability, mental disability,* and *learning disability*). In the multivariate models, students without disabilities are the reference group. This operationalization of disability is valuable because it allows this study to examine how the relationship between disability status and victimization risk varies by the type of disability. For instance, it is possible that only certain disability types are related to sexual and stalking victimization and that failing to take this into account could mask these relationships. It is important to note that the three disability type

variables, *physical disability*, *mental disability*, and *learning disability*, are not mutually exclusive groups and it is possible that a respondent could have values of 1 for more than one disability type variable. For instance, a respondent with a hearing impairment, ADHD, and a psychiatric condition would be coded as having all three disability types. However, although the disability type measures are not mutually exclusive (i.e., a respondent could have a physical disability and a mental disability), each variable has mutually exclusive, dichotomous responses (e.g., physical disability; 0 = no physical disability and 1= physical disability).

The final disability variable utilized in this analysis is *number of disability types*. This measure is a count of *type of disability* and is composed of two dichotomous variables, *one disability type* (e.g., physical disability only) and *two or more disability types* (e.g., mental and learning disability; or, mental, physical, and learning disability). Students without any disabilities were the reference group for this measure in the multivariate models for sexual and stalking victimization. The creation of this measure was informed from Casteel's et al.'s (2008) finding that those with severe disabilities were more likely to experience a sexual victimization than those with no disability or moderate disabilities. Although this study is not able to rank disabilities on a similar severity scale, a count of disability types could reflect this same general idea (i.e., a greater number of impairments could result in more severe activity limitations). It is important to note that this measure is not a count of the number of disabilities, but the type of disability. Therefore, it is possible that someone could have more than one disability yet be defined as having only one type of disability. For instance, a respondent with both a visual impairment and speech and language disorder would only be coded as having one type of disability, a physical disability. This measure is valuable because it will allow the current study to examine if having a disability in more than one type increases a student's risk of victimization. From the theoretical perspective, it could be argued that someone with disabilities in two or more

domains may be viewed by potential offenders as a more vulnerable crime target than a student with only one disability type.

Lifestyles-Routine Activities Measures

Measures of the lifestyles-routine activities concepts, exposure, proximity, target attractiveness, and guardianship, are discussed below. Table 3.3 provides descriptive statistics for each of the variables including their scales, means, standard deviation, and ranges. See Appendix C for the original survey questions used to operationalize measures of the theoretical concepts.

Exposure: Alcohol Consumption. There are two variables that were used to gauge alcohol consumption in this analysis. The first variable, *alcohol use*, is a dichotomous variable (0 = no, 1 = yes) that measures whether the respondents consumed alcohol during the last time they partied and socialized (#10). If a student reported that they had at least one alcoholic beverage during the last party or social event they attended, they were coded as having used alcohol. The second alcohol variable utilized in this analysis is *binge drinking.* This variable measures whether the students had partaken in binge drinking at least once during the two weeks prior to survey administration (#13). *Binge drinking* is a dichotomous variable and students that reported having five or more drinks during one sitting were coded as binge drinkers (0 = no, 1 = yes).[4] When both of these variables are included in the multivariate models, they capture non-drinkers, leisure drinkers, and binge drinkers.

[4] The definition for binge drinking that is included in the survey is based on the binge drinking rate for males only (5+ drinks). For females, binge drinking criteria is defined by 4 or more drinks in one sitting. Because the survey question asks respondents about having "five or more drinks of alcohol," it is not possible to assign women values for this measure based on the female definition. The alternative would be to create a binge drinking variable from the *alcohol use* variable (#10). However, because the original *binge drinking* survey question is a count of binge drinking instances, the author argues that it is a more valid measure of binge drinking than *alcohol use* which would only give respondents positive values for binge drinking if they binge drank the last time they partied.

Exposure: Risk-Taking Behaviors. Three variables reflect risk-taking behaviors on the part of the students: *marijuana use*, *serious drug use*, and *number of sex partners*. Marijuana use is a dichotomous variable that gauges whether the respondents used marijuana with the 30 days prior to the survey (0 = non-user, 1 = user) (#9). Students who reported never using marijuana or had used marijuana in the past but not within the 30-day reference period were coded as non-users. *Serious drug use* is the second measure utilized in this study to assess the use of illicit drugs (#9). This measure is a composite measure comprised of 10 types of illegal drugs: cocaine, methamphetamine, other amphetamine, sedatives, hallucinogens, opiates, inhalants, MDMA (i.e., ecstasy), other club drugs, and other illegal drugs (Cronbach's alpha = .862). *Serious drug use* is an additive scale that was created by averaging the sum of the values for each of the 10 serious drug items. Higher values for this variable reflect more serious drug use by the respondent within the 30-day reference period prior to the survey's administration. The final measure of risk-taking behavior is *number of sex partners*. This measure is a count of the number of partners the respondent had oral sex, vaginal intercourse, or anal intercourse within the 12 months prior to the survey (#19).

Exposure: College- and School-Related Activities. Drawing from past research on college students, this analysis employs two measures of routine behaviors associated with the school. The first measure, *fraternity/sorority membership*, is a dichotomous variable that reflects membership in a Greek organization (#59). Any respondent who reported being involved with social fraternities or sororities were coded as being a member (0 = no, 1 = yes). The second school-related measure of exposure is *athletic participation*. This variable is a composite measure of three survey items that asked respondents about their participation in any organized college athletics including: 1) varsity sports, 2) club sports, and 3) intramural sports (#64). This

measure is dichotomous (0 = no, 1 = yes) and any respondent that reported participating in one of the three sports were coded as participating in athletics.

Exposure: General Leisure Activities. Unlike some past data sets such as Mustaine and Tewksbury's (1999, 2002) that included very rich measures of leisure activities (e.g., shopping at the mall, going to the movie, going out to eat), the NCHA-II survey instrument did not ask respondents about these types of routine, leisure behaviors. However, one measure included in the survey which reflects an activity that respondents could participate in during their leisure time is *volunteering* (#61). This measure is dichotomous (0 = no, 1 = yes) and reflects how much time the respondents spent volunteering during the week. If a respondent reported volunteering for at least one hour each week, they were coded as being a volunteer. Although this is not the most ideal measure of college students' general leisure activities, it could potentially play an important role in influencing a respondent's level of exposure to motivated offenders.

Proximity. The NCHA-II survey includes two items that reflect the lifestyles-routine activities concept of proximity. The first of these measures, which is a widely utilized measure of the concept in studies of college students, is *housing* (#58) There are two dichotomous dummy variables that were created to reflect this measure. The first is *lives with parents/guardians*. The second is *off-campus housing* which includes off-campus housing and other housing. In the multivariate models, the reference group for the housing measure is living on-campus which is comprised of campus residence halls, fraternity or sorority housing, and other college/university housing. The second proximity measure utilized in this analysis is *employment* (#60). This variable is a dichotomous in nature and respondents were coded as being employed if they reported working at least one hour each week (0 = no, 1 = yes). This

measure was operationalized as proximity and not exposure because employed people spend a significant amount of their time in close physical distance to their coworkers, who could be potential offenders. For stalking victimization, there is past evidence that employment plays an important role in shaping victimization risk (Mustaine and Tewksbury, 1999), and the mechanism behind the relationship could be proximity to potential offenders.

Target Attractiveness. Similar to past studies that have examined sexual and stalking victimization among college students, the primary target attractiveness measure that is employed is in this analysis is *relationship status* (#56). This measure is dichotomous (0 = no, 1 = yes) and respondents who reported having a significant other that they lived with or did not live with were coded as being in a relationship. Students that reported not being in a relationship at the time that the survey was administered were the reference group. The second target attractiveness measure is *sexual orientation* (#48). *Sexual orientation* is also dichotomous; heterosexuals were assigned values of 0 and students who reported being homosexual, bisexual, or unsure about their sexuality were assigned values of 1. Based on Finkelhor and Asdigian's (1996) perspective, individuals with non-heterosexual orientations could be perceived as more attractive crime targets due to target antagonism. For instance, a student's sexual orientation may trigger negative emotions in certain types of offenders such as those with prejudices towards gays, lesbians, or bisexual individuals.

Guardianship. The guardianship measure that is employed is this analysis is *received crime prevention information*. This measure was created from three survey question that asked respondents if they had received information from the college or university on: 1) injury prevention, 2) sexual assault and relationship violence prevention, and 3) violence and crime prevention (#2). This measure is dichotomous and respondents who reported that they had

received information on any of three topics were assigned the value of 1, while students who answered that they had not received information on prevention were assigned a value of 0. Based on the lifestyles-routine activities framework, students who have received information on how to protect themselves from injuries, sexual violence, and crime should theoretically be more capable guardians.

Control Variables

There are nine control variables utilized in this analysis. Eight of the variables can be broken down into two broad grouping, demographic characteristics and school-related characteristics. Demographic control variables include: *age*, *sex*, and *race.* Age is a continuous variable that ranges from 18 to 25 (#46). *Sex* (0 = female, 1 = male) (#47) and *race* (0 = nonwhite, 1 = white) (#54) are dichotomous variables.[5] The school-related control variables include: *enrollment status*, *grade point average* (*GPA*), and *university type.*[6] *Enrollment status* (0 = full-time, 1 = part-time) (#52) and *university type*[7] (0 = two-year institution, 1 = four-year institution) are dichotomous variables. The *GPA* measure is comprised of two dummy variables, *C or below average*, and *No GPA* (#63). Each measure is dichotomous and the reference group is students with GPAs that are above average (As and Bs). The final control variable is *mode of survey administration* (0 = paper, 1 = web). This variable is included in the multivariate models to take into account potential differences between the two modes of survey administration.

[5] Due to the small number of cases, students who reported being transgendered were excluded from the sample.
[6] Year in school was excluded from the multivariate analyses due to its high bivariate correlation (.729) with age. Regression diagnostics indicated that the two variables had a low tolerance value (.469) which suggests that there could be problems with multicollinearity when estimating models.
[7] No NCHA-II survey question number is provided because the university type variable was included in the institutional-level data from a survey completed by the participating institutions and not the student respondents.

STATISTICAL ANALYSES

This study employed bivariate and multivariate analyses to explore the relationship between disability status, routine activities, and victimization risk among college students. Descriptive statistics such as frequencies and percentages were utilized to estimate the prevalence of disability, sexual assault victimization, and stalking victimization in the sample. To examine if the proportion of victims differ across students with and without disabilities, Z-tests for two proportions were conducted. A Z-test for two proportions is the appropriate statistical technique for comparing proportions from two independent samples (e.g., students without disabilities and students with disabilities). Furthermore, the Z-test for two proportions is the appropriate hypothesis test to employ given the probability-based sampling design and the large sample size (N = 20,000+) (Hogg and Tanis, 2006).

The multivariate model estimation technique that was used to examine the relationship between disability status, routine activities, and sexual assault and stalking victimization is binary logistic regression. Binary logistic regression is the appropriate statistical technique to utilize because the dependent variables in this analysis, sexual victimization (e.g., rape, sexual touch without consent, and sexual assault) and stalking victimization, were non-linear and dichotomous in nature (0 = no, 1 = yes). Logistic regression transforms the dependent variable into a logit (log odds) in order to make the form of the relationship linear so that it can be analyzed using ordinary least squares (OLS) regression (Mendard, 2002). Tables presenting the results from the binary logistic regression models will include odds ratios, 95% confidence intervals, model fit statistics (e.g., -2 log likelihood and model chi-square), and measures of association (e.g., psudeo-R^2).

Due to the fact that the students were nested within 40 post-secondary institutions, robust standard errors will be estimated. Robust standard errors are necessary to calculate because the

design of the ACHA survey could result in clustered variance that could underestimate the variance and lead to incorrect significance in hypothesis testing and narrow confidence intervals (Hogg and Tanis, 2006). Robust standard errors take into account the potential for clustered variance within the schools and reduce the likelihood of a type II error (i.e., failing to reject a false null hypothesis). Because the dependent variables utilized in this analysis (e.g., sexual and stalking victimization) are disproportionately experienced by females, interaction terms between sex and the measures of disability were be included in each of the multivariate models that were estimated.[8] These interaction terms allowed this study to examine if disability status has a uniform effect across the sexes, or if disability influences males' and females' sexual and stalking victimization risk differently. Stata version 11 was used to estimate the multivariate models.

SUMMARY

This chapter provides a detailed outline for the methodology used to examine the relationship between disability status and sexual and stalking victimization while controlling for a wide-variety of lifestyle characteristics and routine activities. By utilizing three different measures of disability status, this current study should be able to establish whether or not disability is a significant risk factor for victimization among college students, and if so, whether the relationship varies based on particular facets of disabilities (e.g., the type or the number of types). In addition, by controlling for known risk factors of victimization among the college population, this study will be able to examine if disability status and sexual assault and stalking

[8] Collinearity diagnostics were conducted to determine if there was multicollinearity among the sex and disability type (e.g., physical, mental, and learning) interaction effects. None of the estimated tolerance values or correlation coefficients fell outside of the accepted range indicating that the inclusion of the interaction effects in the models should not result in erroneous findings or unstable estimates.

victimization risk have a relationship independent of lifestyle characteristics and routine activities; a factor that has largely been ignored in past research.

Chapter 4 presents the results from the bivariate and multivariate analyses including the prevalence of disability and victimization, and significant predictors of sexual and stalking victimization risk from the binary logistic regression models. These results are discussed in more detail in Chapter 5, as well as closing thoughts and a discussion of the implications of the results for prevention and policy.

Chapter 4

RESULTS

This chapter provides a discussion of the results from the analyses that were conducted to examine the relationship between disability status, routine activities, and sexual and stalking victimization. First, prevalence of disability among the sample is reported including frequencies and percentages for total disability status as well as for the different types of disabilities (e.g., physical, mental, and learning) and the number of disability types. Second, prevalence estimates for sexual and stalking victimization are presented for the total sample and sub-samples of students with and without disabilities along with Z-values for the two samples proportion tests. Next, the results from the multivariate binary logistic regression models are presented. Chapter 5 will provide an in-depth discussion of the bivariate and multivariate results presented in this chapter.

PREVALENCE OF DISABILITY

Although the primary research questions of interest in this dissertation are concerned with the relationship between disability status and victimization risk, prevalence estimates of disability status are also valuable to discuss due to the limited national-level research on the subject, and for demonstrating that students with disabilities comprise a notable proportion of the average student body (see Henderson, 2001; GAO, 2009). Based on this study's operationalization of disability (see Chapter 3), approximately 15% (N = 3,064) of the sample reported having at least one disability. Table 4.1 presents disability prevalence estimates for total disability status, the type of disability (e.g., physical, mental, learning), and the number of disability types. Of the three disability types examined in this analysis, physical disabilities were

Table 4.1: Prevalence of Disability (N = 20,486)

	N	%[1]
Total Disability	3,064	14.96
Physical	761	3.71
Mobility/Dexterity	81	0.40
Hearing	262	1.28
Visual	345	1.69
Speech/Language	124	0.61
Mental	1,308	6.38
Psychiatric Condition	776	3.80
Bipolar Disorder	190	0.93
Obsessive Compulsive Disorder	370	1.81
Schizophrenia	12	0.06
Phobia	159	0.78
Other Mental	290	1.43
Learning	1,461	7.13
Attention Deficit Hyperactivity Disorder	1,048	5.13
Learning	698	3.42
Type of Disability		
One Type	2,633	12.85
Two or More Types	431	2.10
Physical and Mental	53	0.26
Mental and Learning	253	1.23
Learning and Physical	90	0.44
Physical, Mental, and Learning	35	0.17

[1]N's and percentages do not sum perfectly because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

the least common and were reported by 3.7% of the sample. Among the disabilities that comprised physical disability, visual impairments were the most common (1.7%), followed by hearing impairments (1.3%), speech and language disorders (0.6%), and mobility/dexterity disabilities (0.4%).

The second most common type of disability reported by the sample was mental disabilities. Approximately 6% of the students had a disability that was operationalized as a

mental disability. Of the mental disabilities, psychiatric conditions were reported the most by the respondents (3.8%), followed by obsessive compulsive disorder (1.8%), and other mental health disorders (1.4%). The least common mental disabilities among the sample were bipolar disorder (0.9%), phobias (0.8%), and schizophrenia, which was only reported by 12 respondents (0.1%). The most prevalent type of disability among the sample was learning disabilities which were reported by slightly more than 7% of the respondents. Within the learning disability type, approximately 5% and 3.5% of the respondents reported attention deficit hyperactivity disorder (ADHD) and learning disabilities respectively.

Among the 3,064 students who reported a disability, the majority of them (86%) had only one type of disability (12.9% of the total sample). Approximately 2% of the sample had disabilities in more than one domain. The most common combination of disability types was mental and learning disabilities; 1.2% of the sample had disabilities that were categorized in both the mental and learning disability groups. The other combinations were reported by less than 1% of the respondents. Only 53 (0.3%) students had a physical and mental disability, while 90 (0.4%) had a learning and physical disability. Although it was the least commonly reported combination of disability types , there were 35 students (0.2%) that had a disability in each of the three domains (e.g., a physical, mental, and learning disability).

Table 4.2 includes a ranking of the 12 disabilities that were used to operationalize disability status by their prevalence among the 3,064 students that reported having at least one disability. As the results in this table demonstrate, attention deficit hyperactivity disorder (ADHD) was the most common disability among the sample: 34.3% of those with disabilities reported having ADHD. Psychiatric conditions (25.4%) and learning disability (22.9%) were the next most prevalent disabilities among the sample. A sizable number of the students with disabilities reported having obsessive compulsive disorder (12.1%), visual impairments (11.3%),

Table 4.2: Disability Ranking (N = 3,064)

Disabilities	N	%[1]
Attention Deficit Hyperactivity Disorder	1,048	34.30
Psychiatric Condition	776	25.43
Learning Disability	698	22.88
Obsessive Compulsive Disorder	370	12.13
Visual Impairment	345	11.30
Other Mental Health Disorder	290	9.56
Hearing Impairment	262	8.58
Bipolar Disorder	190	6.27
Phobia	159	5.24
Speech or Language Disorder	124	4.06
Mobility/Dexterity Disability	81	2.65
Schizophrenia	12	0.40

[1] Row percentages do not sum to 100% because the disabilities are not mutually exclusive and respondents could report having more than one disability.

other mental health disorders (9.6%), and hearing impairments (8.6%). The least reported disabilities were bipolar disorder (6.3%) followed by phobias (5.2%), speech and language disorders (4.1%), mobility/dexterity disabilities (2.7%), and schizophrenia (0.4%).

In sum, a sizable proportion (15.0%) of the students in the sample reported having at least one of the 12 disabilities (e.g., mobility/dexterity disabilities, visual impairments, hearing impairments, speech/language disorders, psychiatric conditions, bipolar disorder, obsessive compulsive disorder, schizophrenia, phobias, other mental health disorders, attention deficit hyperactivity disorder, and learning disabilities) that were examined in this analysis. This proportion is similar to, but slightly higher than estimates from past studies on college students (see Henderson, 2001; GAO, 2009). In regards to the type of disability, learning disabilities (7.1%) were the most commonly experienced disabilities followed by mental disabilities (6.4%) and physical disabilities (3.7%). Although a majority of those with disabilities only had disabilities in one domain, a notable proportion of respondents (2%) had disabilities that fell into more than one disability type. Taken together, these results provide evidence that a significant

proportion of college students in the sample had a disability and therefore, a closer inspection of their victimization risk is warranted.

PREVALENCE OF SEXUAL VICTIMIZATION

Prevalence estimates for the three types of sexual victimizations—sexual assault, sexual touch without consent, and rape—and Z-tests for two sample proportions among victims with and without disabilities are presented in Table 4.3, Table 4.4, and Table 4.5, respectively.

Sexual Assault Victimization

Table 4.3 presents the prevalence estimates for sexual assault victimization (i.e., composite measure of sexual touch without consent and attempted and completed rape) among the full sample, and sub-samples of students with and without disabilities. Approximately 8% of the total sample reporting being a victim of a sexual assault within the 12 months prior to the survey's administration. When the total sample was dichotomized by disability status, a greater proportion of students with disabilities reported having experienced a sexual assault victimization. While slightly less than 8% of the students without a disability experienced a sexual assault victimization, 13.3% of the students with a disability reported being sexually assaulted. A significance test examining the number of victims in each group indicates that the difference between these two groups is statistically significant and that a significantly larger proportion of students with disabilities reported a sexual assault victimization.

As Table 4.3 demonstrates, this same pattern was observed across each of the three different types of disabilities. Approximately 13% of students with physical disabilities reported having experienced a sexual assault victimization. When compared to students without disabilities (7.6%), the difference in the proportion of victims in each group was statistically significant. For each of the four impairments that comprise the physical disability group (e.g.,

Table 4.3: Prevalence of Sexual Assault Victimization Among Students with and without Disabilities

	N	%[1]	Z-Value
Full Sample	1,735	8.48	
Any Disability			
No	1,328	7.63[2]	3.50*
Yes	407	13.30	
Physical Disability	95	12.48	1.69*
Mobility/Dexterity	8	9.88	0.24
Hearing	33	12.60	1.05
Visual	47	13.62	1.50
Speech/Language	15	12.10	0.65
Mental Disability	223	17.06	4.56*
Psychiatric Condition	129	16.65	3.52*
Bipolar Disorder	33	17.37	2.05*
Obsessive Compulsive Disorder	63	17.03	2.68*
Schizophrenia	3	25.00	1.13
Phobia	40	25.16	3.99*
Other Mental	55	18.97	3.02*
Learning Disability	171	11.73	1.85*
ADHD	125	11.95	1.70*
Learning	86	12.37	1.58*
Number of Types of Disability			
One	332	12.62	2.90*
Two or More	75	17.44	3.02*
Physical and Mental	12	22.64	2.54*
Mental and Learning	43	17.06	2.25*
Learning and Physical	13	14.44	0.92
Physical, Mental, and Learning	7	20.00	1.22

* $p < 0.05$

[1] Row percentages do not sum to 100% because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

[2] Students without a disability are the reference group for all Z-tests of proportions.

mobility/dexterity disabilities, visual impairments, hearing impairments, and speech and language disorders), there was a larger raw percentage of victims within each of the separate physical disabilities when compared to students without a disability. However, despite the larger proportion of victims in the physical disability group, the difference between the proportion of victims among students with and without disabilities was not statistically significant for any of the individual physical disabilities.

Similar to the physical disability group, there were a larger percentage of sexual assault victims among students with mental disabilities than students who did not report having a disability. Students with mental disabilities had a sexual assault victimization rate that was over twice as high as students without mental disabilities (17.6% compared to 7.6%, respectively). Furthermore, for five of the six disabilities that comprised the mental disability group, there was a significantly larger proportion of victims among students with mental impairments; only for schizophrenia was the difference not statistically significant. The greatest number of victims with mental disabilities was observed for phobias and schizophrenia where approximately one quarter of the students with these types of impairments reported a sexual assault victimization. However, although the percentage of victims was smaller among the other four mental disabilities (e.g., psychiatric conditions, bipolar disorder, obsessive compulsive disorder, and other mental health disorder), there was a sizable proportion of victims within each of these disabilities ranging between 16.6% and 25.2%. As a collective, there was a greater proportion of victims among each of the six disabilities classified as a mental disability than for the other disabilities that comprised the physical and learning disability groups.

Students with learning disabilities also reported having a sexual assault victimization rate that was significantly higher than the rate for students without disabilities (12% compared to 7.6%, respectively). For both disabilities that comprised the learning disability group, ADHD

(12.0%) and a learning disability (12.4%), a greater proportion of students reported being sexually assaulted within the 12-month reference period of the survey than students without disabilities. Z-tests for proportions indicate that there was a significant difference in the number of victims across students with learning disabilities and without disabilities in regards to their sexual assault experiences. Significant differences among the proportion of sexual assault victims was also found between students with only one disability type (12.6%) and those with two or more types of disability (17.4%). That is, in proportion to their population, there was a larger number of sexual assault victims among the students who reported having impairments that were categorized in two or more types of disabilities than among students with only one type of disability or no disability. Although there was a greater raw percentage of sexual assault victims among each of the four combinations of disability types, only for physical and mental disability and mental and learning disability was the difference between the proportion of victims statistically significant when compared to students without a disability.

Sexual Touch Without Consent Victimization

The prevalence estimates and Z-tests for two samples proportions for sexual touch without consent are presented in Table 4.4. Due to the fact that the general pattern of the prevalence results for sexual assault victimization mirror the results for each of the specific types of sexual victimization measures (e.g., sexual touch and rape), the discussion of the prevalence findings for sexual touch without consent and rape will focus only on some of the key results or differences that emerged. Approximately 8% of the respondents reported having experienced a sexual touch without consent within the 12-month period prior to the survey's administration. When the sample was dichotomized by disability status, there were almost twice as many victims

Table 4.4: Prevalence of Sexual Touch Without Consent Victimization Among Students with and without Disabilities

	N	%[1]	Z-Value
Full Sample	1,561	7.64	
Any Disability			
No	1,193	6.87[2]	3.20*
Yes	368	12.08	
Physical Disability	87	11.49	1.61*
Mobility/Dexterity	8	10.00	0.35
Hearing	31	11.92	1.09
Visual	42	12.17	1.32
Speech/Language	14	11.38	0.66
Mental Disability	207	15.94	4.39*
Psychiatric Condition	118	15.34	3.31*
Bipolar Disorder	30	15.79	1.88*
Obsessive Compulsive Disorder	60	16.30	2.74*
Schizophrenia	2	16.67	0.55
Phobia	38	24.05	3.98*
Other Mental	51	17.71	2.91*
Learning Disability	151	10.39	1.57*
ADHD	110	10.55	1.43
Learning	77	11.11	1.40
Number of Types of Disability			
One	298	11.38	2.60*
Two or More	70	16.36	2.95*
Physical and Mental	11	21.15	1.85*
Mental and Learning	39	15.54	2.07*
Learning and Physical	13	14.44	1.07
Physical, Mental, and Learning	7	20.00	1.36

* $p < 0.05$

[1] Row percentages do not sum to 100% because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

[2] Students without a disability are the reference group for all Z-tests of proportions.

among those with disabilities (12.1%) compared to students without disabilities (6.9%); this differences was statistically significant.

Similar to the sexual assault results, among the disability types, the greatest proportion of victims was found in the mental disability group (15.9%), followed by the physical disability group (11.5%), and the learning disability group (10.4%). Consistent with the composite sexual assault measure, relative to their size in the sample, there was a greater number of victims among students who reported having more than one type of disability (16.4%), in comparison to students with only one type of disability (11.4%) or no disability (6.9%). Among the mental disability group, with the exception of schizophrenia, all of the Z-values were statistically significant. Although there was a significantly larger proportion of victims of sexual touch without consent among students who reported having a physical or learning disability, none of the individual disabilities that comprised each type were statistically significant. Despite some minor differences, the prevalence for sexual touch without consent parallel the general results for sexual assault victimization and demonstrate that ,on average, there is a greater proportion of nonconsensual sexual touch victims among students with disabilities.

Rape Victimization

Table 4.5 displays the prevalence estimates and results from the Z-tests for two sample proportions for rape victimization. Similar to past national-level studies on samples of college students (see Table 1.1), approximately 3% of the respondents reported experiencing a rape victimization in the year prior to completing the ACHA-NCHA-II survey. As anticipated based on past research and theoretical expectations, there was a larger proportion of rape victims among students with disabilities (5.6%) than those without disabilities (2.7%). Once again, it appeared that a greater proportion of students within the mental disabilities group reported

Table 4.5: Prevalence of Rape Victimization Among Students with and without Disabilities

	N	%[1]	Z-Value
Full Sample	638	3.12	
Any Disability			
No	466	2.68[2]	1.80*
Yes	172	5.62	
Physical Disability	39	5.12	0.88
Mobility/Dexterity	4	4.94	0.28
Hearing	15	5.73	0.71
Visual	19	5.51	0.73
Speech/Language	4	3.23	0.07
Mental Disability	100	7.65	2.43*
Psychiatric Condition	59	7.61	2.02*
Bipolar Disorder	16	8.42	1.35
Obsessive Compulsive Disorder	24	6.49	1.09
Schizophrenia	3	25.00	2.33*
Phobia	19	11.95	2.31*
Other Mental	26	8.97	1.83*
Learning Disability	68	4.67	0.91
ADHD	56	5.36	1.12
Learning	33	4.75	0.69
Number of Types of Disability			
One	140	5.32	1.54
Two or More	32	7.44	1.53
Physical and Mental	5	9.43	0.92
Mental and Learning	21	8.33	1.50
Learning and Physical	3	3.33	0.07
Physical, Mental, and Learning	3	8.57	1.00

* $p < 0.05$

[1] Row percentages do not sum to 100% because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

[2] Students without a disability are the reference group for all Z-tests of proportions.

having experienced a rape victimization (7.7%) in comparison to the physical disability (5.1%) and learning disability (4.7%) groups. Although there was a greater proportion of victims among the physical and learning disability groups, neither group was found to differ significantly from students who reported having no disability.

It is important to note that due to small cell frequencies, some of the Z-test statistics should be interpreted with caution. However, despite this limitation, and several nonsignificant Z-values, the overall pattern that emerges from Table 4.5 is that in proportion to their size in the sample, a greater amount of rape victimization was reported by students with disabilities in comparison to their counterparts without disabilities. Similar to what was observed in Tables 4.3 and 4.4 with sexual assault and sexual touch without consent, for all twelve of the disabilities and for each of the broader operationalizations of disability, there was a larger percent of victims within these groups than in the group for students without disabilities. Taken together, the prevalence results for the three sexual victimization measures lend support to the argument that disability status is a risk factor for sexual victimization. However, the multivariate binary logistic regression models will need to be estimated to demonstrate whether or not this relationship persists once controls for lifestyle characteristics and routine behaviors are taken into account.

PREVALENCE OF STALKING VICTIMIZATION

Table 4.6 provides prevalence estimates and Z-tests for proportions for stalking victimization among the full sample, and sub-samples of students with and without disabilities. Approximately, 7% of the college students reported being a victim of a stalking incident in the 12-months period before the NCHA-II survey. When stalking victimization prevalence was

Table 4.6: Prevalence of Stalking Victimization Among Students with and without Disabilities

	N	%[1]	Z-Value
Full Sample	1,495	7.33	
Any Disability			
No	1,154	6.65[2]	2.76*
Yes	341	11.18	
Physical Disability	76	10.03	1.13
Mobility/Dexterity	9	11.25	0.55
Hearing	26	9.92	0.66
Visual	33	9.65	0.68
Speech/Language	16	12.90	0.99
Mental Disability	186	14.31	3.63*
Psychiatric Condition	108	13.97	2.80*
Bipolar Disorder	39	20.74	3.37*
Obsessive Compulsive Disorder	60	16.35	2.85*
Schizophrenia	1	8.33	0.07
Phobia	38	24.05	4.08*
Other Mental	40	13.84	1.76*
Learning Disability	154	10.60	1.79*
ADHD	112	10.74	1.62*
Learning	66	9.54	0.91
Number of Types of Disability			
One	273	10.42	2.14*
Two or More	68	15.89	2.87*
Physical and Mental	11	20.75	1.85*
Mental and Learning	42	16.73	2.51*
Learning and Physical	8	8.89	0.25
Physical, Mental, and Learning	7	20.59	1.47

* $p < 0.05$

[1] Row percentages do not sum to 100% because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

[2] Students without a disability are the reference group for all Z-tests of proportions.

estimated for sub-samples of students with and without disabilities, the same pattern emerged that was observed for sexual victimization; there was a greater proportion of stalking victims among students with disabilities when compared to those without any disabilities. Specifically, 11.2% of all students with a disability reported experiencing a stalking victimization compared to 6.7% of the respondents that did not report having a disability. Z-tests for proportions indicate that the difference in the number of victims in each group was statistically significant.

As would be expected based on theory and past research, a greater proportion of stalking victims was also found among students with physical disabilities (10.0% compared to 6.7%, respectively). However, the difference in the number of students who reported experiencing a stalking victimization across the two groups (i.e., students with physical disabilities and students without disabilities) was not statistically significant. Similar to what was observed across the three sexual victimization measures (e.g., sexual assault, sexual touch without consent, and rape), although there was a larger proportion of stalking victims among students with mobility/dexterity disabilities (11.3%), visual impairments (9.7%), hearing impairments (9.9%), and speech/language disorders (12.9%) in comparison to students without disabilities (6.7%), none of the Z-test statistics were significant for the individual physical disabilities.

Consistent with the results for sexual assault victimization, students with mental disabilities were also found to have a higher rate of stalking victimization than students without disabilities. Z-tests for two sample proportions indicate that the difference between these two groups was statistically significant with over twice as many stalking victims among respondents with mental disabilities in comparison to those with no disability (14.3% compared to 6.7%, respectively). The amount of stalking victims was also found to be significantly higher among each of the six disabilities that comprise the mental disability group. The largest proportion of victims was found among students with phobias (24.1%) and bipolar disorder (20.7%). The only

mental disability that did not have a significantly larger proportion of victims was schizophrenia; only one of the 12 students with schizophrenia reported having experienced a stalking victimization. Approximately 11% of the students with learning disabilities reported being a victim of stalking. When compared to the 6.7% of students without disabilities that reported a stalking victimization, the difference in the proportion of victims in each group was statistically significant. In addition, a greater proportion of stalking victims was found among the students with ADHD (10.7%) and learning disabilities (9.5%) when compared to students with no disability; however, only for ADHD was the difference statistically significant.

When students with one type of disability were compared to those with two or more disability types, the latter group was found to experience stalking victimization at a greater rate (15.9% compared to 10.4%, respectively). Similar to what was observed for sexual victimization, there was a larger amount of stalking victims among students with two or more disability types in comparison to students with no disability or those with disabilities that fall under the umbrella of only one disability type. Additionally, for two of the four disability type combinations (physical and mental disability; mental and learning disability) there was a significantly larger proportion of stalking victims in each of the groupings in comparison to students with no disabilities. An interesting finding, which should be interpreted with caution due to small number of victims, is that compared to the other disability type combinations, there were two times fewer victims in the learning and physical disability group (8.8% compared to 16.7-20.7%, respectively). Additionally, the percentage of victims in the learning and physical disability group (i.e., students with *two* types of disability) appeared to fall fairly evenly between the proportion of students with no disabilities (6.7%) and the proportion of students with only one type of disability (10.4%). Although there were some differences between the stalking results and those observed for the measures of sexual victimization (which is not unexpected

given each victimization's unique opportunity structure), an overall trend emerges that provides evidence that there is a relationship between disability status and victimization risk.

DISABILITY AND SEXUAL VICTIMIZATION

The results from the binary logistic regression models predicting the three measures of sexual victimization—sexual assault victimization, sexual touch without consent victimization, and rape victimization—are presented in Tables 4.7, 4.8, and 4.9, respectively. For each outcome measure, three separate models were estimated; each model included one of the three operationalizations of disability status (e.g., any disability, type of disability, and the number of disability types) as well as demographic characteristics and measures of the theoretical concepts—exposure, proximity, target attractiveness, and guardianship—from the lifestyles-routine activities framework. The results from these multivariate analyses will be valuable for establishing if the relationship between disability status and victimization risk that was found from the bivariate analyses (see Tables 4.3-4.6), will persist once demographic characteristics and routine behaviors have been taken into account. Furthermore, the inclusion of the interaction terms between disability status and sex will be useful for testing if the relationship between disability and sex is uniform for males and females.

Because the primary research question for this study concerns disability status and victimization, and to facilitate a more parsimonious presentation of the results, models will be displayed in the text that include only the measures of disability, sex, and their corresponding interaction terms. The results for the full binary logistic regression models which include model fit statistics (e.g., pseudo R^2, -2 log likelihood, and chi-squares) and the adjusted odds ratios and 95% confidence intervals for the demographic characteristics and lifestyles-routine activities

measures are provided in Appendix D (sexual assault), Appendix E (sexual touch without consent), and Appendix F (rape).

Sexual Assault Victimization

Table 4.7 provides the adjusted odds ratios and 95% confidence intervals for the three multivariate models estimated to examine the relationship between disability status and risk of sexual assault victimization.

Model 1: Any Disability. As hypothesized based on theory and past research, students with disabilities were significantly more likely than students without a disability to report having experienced a sexual assault victimization within the 12-month reference period prior to the survey's administration. In particular, students who had at least one of the twelve disabilities examined in this study were over one and a half times more likely to experience a sexual assault than students without disabilities even after controlling for other known risk factors for sexual assault victimization (AOR = 1.711, 95% CI 1.504-1.948). Although females students were more likely to report a sexual assault victimization, which would be expected based on past research, the interaction effect between disability and sex was not significant indicating that disability status did not influence risk of sexual assault differently for male and female students.

Model 2: Type of Disability. The previous model established that having any disability (0 = no, 1 = yes) was associated with an increased risk of sexual assault victimization, the purpose of this model (Model 2) is to examine if the type of disability (e.g., mental, physical, and learning) reported by the respondents influenced their risk of being sexually assaulted. After controlling for other factors that could affect victimization risk (e.g., demographic characteristics and lifestyle-routine activities measures), the results indicate that two of the disability types were

Table 4.7: Binary Logistic Regression Models for Sexual Assault Victimization[1] (N = 19,366)

	Sexual Assault Victimization	
	AOR	95% CI
Model 1: Any Disability		
Main Effects		
Disability	1.711*	1.504—1.948
Sex	0.284*	0.239—0.337
Interaction Effects		
Disability*Sex	0.908	0.627—1.315
Model 2: Type of Disability		
Main Effects		
Physical	1.469*	1.144—1.888
Mental	1.995*	1.665—2.391
Learning	1.159	0.967—1.387
Sex	0.281*	0.234—0.336
Interaction Effects		
Physical *Sex	1.342	0.805—2.239
Mental *Sex	0.601	0.300—1.207
Learning *Sex	1.214	0.789—1.867
Model 3: Number of Disability Types		
Main Effects		
One Type	1.648*	1.440—1.885
Two or More Types	2.118*	1.545—2.905
Sex	0.284*	0.239—0.338
Interaction Effects		
One Type*Sex	0.847	0.545—1.318
Two or More Types*Sex	1.257	0.617—2.560

* $p < 0.05$

[1] Control variables included: age, race, enrollment status, grade point average, university type, mode of survey administration, binge drinking, alcohol use, marijuana use, serious drug use, number of sexual partners, fraternity/sorority membership, athletic participation, volunteers, housing, employment, relationship status, sexual orientation, and received crime prevention information.

significantly related to sexual assault victimization, physical disability and mental disability (see Table 4.7). Mental disability had the largest effect on the likelihood of being a victim. In particular, students with mental disabilities were approximately twice as likely to report having experienced a sexual assault victimization than students without a mental disability (AOR = 1.995, 95% CI 1.665-2.391). Individuals with physical disabilities were also at an elevated risk of sexual assault victimization than their counterparts without physical disabilities. Students with physical disabilities had slightly less than one and a half times greater odds of being sexually assaulted (AOR = 1.469, 95% CI 1.144-1.888).

Although physical disability and mental disability were significantly related to risk of sexual assault, learning disability was not associated with an elevated risk of victimization. That is, risk of sexual assault victimization for students with a learning disability was not significantly different than the risk for students without disabilities. As was observed in Model 1, while the main effect of sexual assault was significant, the interaction between the types of disability and sex were not statistically significant. This finding provides evidence that the effect of mental and physical disability on sexual assault victimization was similar for the sexes.

Model 3: Number of Disability Types. The results from the binary logistic regression model utilizing the third operationalization of disability, number of disability types, are presented in Table 4.7. This model was estimated to examine if sexual assault victimization risk may be a function of the number of disability types reported by the respondent. The results demonstrate that both measures of disability, one type and two or more types, were significantly related to the likelihood of being a sexual assault victim. In comparison to students without disabilities, students with only one type of disability were slightly over one and a half times more likely to report having experienced a sexual assault victimization (AOR = 1.648, 95% CI 1.440-1.885).

Consistent with theoretical expectations, students with two or more disability types had an elevated sexual assault risk when compared to students without disabilities and those with only one type of disability. Specifically, individuals with disabilities that fell within two or more domains were slightly over twice as likely as students with no disability to be sexually assaulted (AOR = 2.118, 95% CI 1.545-2.905). Once again, while the main effects of sex on risk was significant, neither of the interaction effects were statistically related to sexual assault victimization risk. Taken together, these findings support the results presented in the previous two models that, on average, disability status is a significant predictor of sexual assault victimization and that the effect of disability appears to influence females and males similarly.

Sexual Touch Without Consent Victimization

The results from the three binary logistic regression models estimated to examine the relationship between disability status and sexual touch without consent are presented in Table 4.8. Results for the full model including the odds ratios and the 95% confidence intervals for the demographic and routine behaviors controls can be found in Appendix E.

Model 1: Any Disability. Similar to the results presented for the composite sexual assault victimization measure, the multivariate analysis for sexual touch without consent demonstrates that there was a significant and positive relationship found between disability status and victimization. Based on the analysis, which also controlled for other potential correlates of risk (i.e., demographic characteristics and measures derived from the lifestyles-routine activities framework), students with disabilities were significantly more likely to report being a victim of a nonconsensual sexual touch than students without disabilities (AOR = 1.738, 95% CI 1.488-2.030). Furthermore, while female respondents were more likely to report a sexual touch without consent than males, the results indicate that the effect of disability status on risk did not

Table 4.8: Binary Logistic Regression Models for Sexual Touch Without Consent Victimization[1] (N = 19,335)

	Sexual Touch Without Consent Victimization	
	AOR	95% CI
Model 1: Any Disability		
Main Effects		
Disability	1.738*	1.488—2.030
Sex	0.315*	0.265—0.374
Interaction Effects		
Disability*Sex	0.823	0.568—1.191
Model 2: Type of Disability		
Main Effects		
Physical	1.523*	1.163—1.994
Mental	2.105*	1.756—2.525
Learning	1.119	0.901—1.390
Sex	0.313*	0.261—0.374
Interaction Effects		
Physical *Sex	1.219	0.735—2.021
Mental *Sex	0.517	0.249—1.075
Learning *Sex	1.173	0.729—1.885
Model 3: Number of Disability Types		
Main Effects		
One Type	1.655*	1.411—1.940
Two or More Types	2.280*	1.672—3.109
Sex	0.315*	0.265—0.375
Interaction Effects		
One Type*Sex	0.798	0.526—1.212
Two or More Types*Sex	0.961	0.453—2.037

* $p < 0.05$

[1] Control variables included: age, race, enrollment status, grade point average, university type, mode of survey administration, binge drinking, alcohol use, marijuana use, serious drug use, number of sexual partners, fraternity/sorority membership, athletic participation, volunteers, housing, employment, relationship status, sexual orientation, and received crime prevention information.

vary across the sexes. That is, the nonsignificant interaction effect provides evidence that disability status is a risk factor for this form of sexual victimization for both males and females.

Model 2: Type of Disability. Consistent with the results from the sexual assault model, type of disability was also found to play a significant role in shaping sexual touch without consent risk. In particular, students who reported having a physical disability or mental disability were more likely to be a victim of nonconsensual sexual touching than students without disabilities. Out of the two significant disability types, mental disability was associated with the largest effect. Specifically, students with impairments that were categorized as a mental disability were over two times as likely as students without mental disabilities to be victimized (AOR = 2.105, 95% CI 1.756-2.525). Although the effect for physical disability was smaller than the effect for mental disability, it was not negligible; in comparison to their counterparts without physical disabilities, students with physical impairments were approximately one and a half times more likely to report experiencing a sexual touch without consent victimization (AOR = 1.523, 95% CI 1.163-1.994). While the main effect for sex was significant, indicating females experienced the greater odds of victimization, none of the three interaction terms were statistically significant.

Model 3: Number of Disability Types. Table 4.8 presents results from the multivariate model utilizing the number of disability types measures (e.g., one type, two or more types). Once again, the results demonstrate that disability status is a significant predictor of sexual victimization risk. Specifically, students who reported having one type of disability were significantly more likely to report being sexually touched without their consent than students with no disability (AOR = 1.655, 95% CI 1.411-1.940). Furthermore, consistent with past research and theoretical expectations students who reported having two or more types of

disabilities were over twice as likely as individuals without disabilities to report a sexual touch without consent victimization (AOR = 2.280, 95% CI 1.672-3.109). As reported in the previous models, while the main effect of sex was significant, neither of the interaction terms were significantly related to the likelihood that a respondent would report being a victim of a nonconsensual sexual touch.

Rape Victimization

Estimates for the multivariate models predicting rape victimization are presented in Table 4.9. Appendix F includes the estimates (e.g., adjusted odds ratios, 95% confidence intervals) and model fit statistics for the full models that each included controls for demographic characteristics and measures of lifestyles and routine activities.

Model 1: Any Disability. As Table 4.9 demonstrates, disability status had a significant influence on a respondent's likelihood of reporting a rape victimization within the 12-month reference period prior to the survey's administration. In particular, students with a disability had slightly less than twice the odds of being raped than students without disabilities (AOR = 1.895, 95% CI 1.600-2.245). Although the main effect of sex was significant indicating that female students experienced the greater likelihood of being victimized, the interaction term for disability and sex was not significant. This finding provides evidence that the effect of disability on rape victimization did not vary significantly for males and females.

Model 2: Type of Disability. Consistent with the results from the sexual assault and sexual touch without consent models, a positive relationship was found between physical and mental disability and rape victimization. Students with mental disabilities were approximately twice as likely as students without a mental disability to report having been raped (AOR = 2.101,

Table 4.9: Binary Logistic Regression Models for Rape Victimization [1]
(N = 19,364)

	Rape Victimization	
	AOR	95% CI
Model 1: Any Disability		
Main Effects		
Disability	1.895*	1.600—2.245
Sex	0.117*	0.077—0.177
Interaction Effects		
Disability*Sex	1.588	0.739—3.413
Model 2: Type of Disability		
Main Effects		
Physical	1.753*	1.282—2.398
Mental	2.101*	1.706—2.588
Learning	1.122	0.836—1.506
Sex	0.120*	0.084—0.171
Interaction Effects		
Physical *Sex	0.697	0.238—2.046
Mental *Sex	1.757	0.741—4.167
Learning *Sex	1.851	0.845—4.052
Model 3: Number of Disability Types		
Main Effects		
One Type	1.866*	1.583—2.200
Two or More Types	2.061*	1.265—3.359
Sex	0.117*	0.078—0.176
Interaction Effects		
One Type*Sex	1.385	0.564—3.400
Two or More Types*Sex	2.935	0.900—9.577

* $p < 0.05$

[1] Control variables included: age, race, enrollment status, grade point average, university type, mode of survey administration, binge drinking, alcohol use, marijuana use, serious drug use, number of sexual partners, fraternity/sorority membership, athletic participation, volunteers, housing, employment, relationship status, sexual orientation, and received crime prevention information.

95% CI 1.706-2.588), while individuals with physical disabilities were over one and a half times more likely to experience a rape victimization (AOR = 1.753, 95% CI 1.282-2.398). Although the bivariate results found a greater proportion of victims among the learning disability group than students without a disability, once the multivariate model was estimated and controls for demographic characteristics and lifestyles were entered into the model, the positive relationship between learning disability and rape victimization was not statistically significant. Similar to the previous results, while women were more likely than males to be raped, the interaction effects for sex and disability type were not significantly related to rape victimization.

Model 3: Number of Disability Types. The results for the model estimating rape victimization with the third operationalization of disability (i.e., the number of disability types) parallel those of the other two sexual victimization outcome measures (e.g., sexual assault and sexual touch without consent). As Table 4.9 indicates, both of the disability measures were significantly related to rape victimization. Students with two or more types of disabilities experienced the highest odds of victimization in comparison to those with only one type of disability (AOR = 1.866, 95% CI 1.583-2.200), or students with no disability. Specifically, students with disabilities categorized in two or more of the three domains (e.g., physical, mental, and learning) were approximately twice as likely as students without disabilities to report being raped (AOR = 2.061, 95% 1.265-3.359). Consistent with the other two measures of sexual victimization, neither of the interaction effects in this model were significantly related to risk of rape victimization. That is, while females in general had greater risk, it did not appear that the effect of disability status on rape victimization varied by the sex of the respondent.

Summary of Sexual Victimization Results

The results from the nine binary logistic regression models presented above demonstrate that, on average, disability status is associated with an increased risk of sexual victimization. This finding was robust across each of the three measures of sexual victimization (e.g., multi-item sexual assault, sexual touch with consent, and rape) and each of the three operationalizations of disability (e.g., any disability, type of disability, and the number of disability types). With the exception of learning disability, which does not appear to be related to an increased risk of sexual victimization, all of the other disability measures were significant and positively related to victimization. When compared to students without disabilities, those with disabilities were consistently more likely to report having experienced a sexual victimization.

Furthermore, the relationship between disability status and sexual victimization remained after controlling for demographic characteristics and other known risk factors for victimization among college students that were derived from the lifestyles-routine activities framework. Providing further support that the relationship between disability status and sexual victimization is robust, none of the interaction terms between disability and sex were statistically significant. Taken together, these findings indicate that although females are more likely to report having experienced sexual victimizations, disability status did not impact males' and females' risk differently.

DISABILITY AND STALKING VICTIMIZATION

Similar to the results presented above for the sexual victimization models, three binary logistic regression models were estimated to predict stalking victimization. Each of the three models included one of the operationalizations of disability utilized in this study (e.g., any

disability, type of disability, and the number of disability types), as well as demographic characteristics and measures of lifestyles and routine activities. The results from these models, including adjusted odds ratios and 95% confidence intervals, are presented in Table 4.10. Once again, for data reduction purposes, models are presented in the text that include only the main effects for disability and sex and the interaction effects for their corresponding terms. However, full models including estimates (e.g., adjusted odds ratios and 95% confidence intervals) for the demographic characteristics and lifestyles-routine activities measures and model fit statistics (e.g., pseudo R^2, -2 log likelihood, and chi-squares) are presented in Appendix G.

Model 1: Any Disability

Table 4.10 displays the results for the multivariate analysis that included the dichotomous disability status measure, any disability (0 = no, 1 = yes). Consistent with theoretical expectations, students who reported having at least one of the twelve disabilities examined in this study were significantly more likely than students without disabilities to have reported experiencing a stalking victimization within the 12-month reference period prior to completion of the NCHA-II survey instrument. In particular, students with disabilities were slightly over one and a half times more likely to be stalked than students without disabilities (AOR = 1.579, 95% CI 1.358-1.836). Although the main effects for disability and sex were significantly related to the likelihood of being a stalking victim, the interaction effect between the two variables was not statistically significant.

Model 2: Type of Disability

The purpose of this model was to examine if type of disability was related to risk of stalking victimization. In contrast to the results from the sexual victimization models, learning disability had a significant main effect with stalking victimization; however, the main effect for

Table 4.10: Binary Logistic Regression Models for Stalking Victimization [1]
(N = 19,309)

	Stalking Victimization	
	AOR	95% CI
Model 1: Any Disability		
Main Effects		
Disability	1.579*	1.358—1.836
Sex	0.438*	0.367—0.522
Interaction Effects		
Disability*Sex	1.064	0.753—1.503
Model 2: Type of Disability		
Main Effects		
Physical	1.078	0.751—1.547
Mental	1.755*	1.348—2.284
Learning	1.321*	1.037—1.683
Sex	0.430*	0.361—0.513
Interaction Effects		
Physical *Sex	2.186*	1.261—3.791
Mental *Sex	1.225	0.752—1.995
Learning *Sex	0.808	0.498—1.311
Model 3: Number of Disability Types		
Main Effects		
One Type	1.524*	1.307—1.778
Two or More Types	1.925*	1.326—2.795
Sex	0.438*	0.367—0.522
Interaction Effects		
One Type*Sex	0.921	0.641—1.322
Two or More Types*Sex	1.917*	1.004—3.658

* $p < 0.05$

[1] Control variables included: age, race, enrollment status, grade point average, university type, mode of survey administration, binge drinking, alcohol use, marijuana use, serious drug use, number of sexual partners, fraternity/sorority membership, athletic participation, volunteers, housing, employment, relationship status, sexual orientation, and received crime prevention information.

physical disability was not statistically significant. The largest adjusted odds ratio out of the two significant disability measures was observed for mental disability. That is, students with at least one of the six disabilities that comprise the mental disability group were over one and a half times more likely than students without mental disabilities to report having experienced a stalking victimization (AOR = 1.775, 95% CI 1.348-2.284). Although the effect was not as large, students with learning disabilities also experienced an increased risk of stalking victimization in comparison to their counterparts without learning disabilities (AOR = 1.321, 95% CI 1.087-1.683).

Unlike the results from the sexual victimization models, there was a significant interaction effect for physical disabilities and sex. This effect suggests that the relationship between physical disability and stalking victimization risk is a function of a respondent's sex, specifically being male. Based on the results from the model, males with physical disabilities experienced an increased risk of stalking victimization in comparison to females with and without physical disabilities, and males without physical disabilities. On the other hand, no significant interaction effects were found for the other disability types.

Model 3: Number of Disability Types

Table 4.10 presents the results from the binary logistic regression model that utilized the number of disability types measures. Once again, disability status was found to be significantly associated with an elevated risk of stalking victimization; both of the disability measures in the model, one type and two or more types, played an important role shaping a student's risk of stalking victimization. Consistent with the hypothesis that individuals with more severe disabilities will be at greater risk of victimization, students who reported having two or more disability types were almost twice as likely than individuals with no disability to report having

experienced a stalking victimization (AOR = 1.925, 95% CI 1.326-2.795). When compared to students without disabilities, students with only one type of disability also had an elevated risk of stalking victimization. Specifically, students who reported having a disability that was classified into only one disability domain were approximately one and a half times more likely to report being stalked (AOR = 1.524; 95% CI 1.307-1.778). Furthermore, there was a significant interaction effect between sex and the two or more disability measure. This effect suggests that while having two or more disability types is a risk factor for both males and females, the effect is stronger for males. In particular, males with multiple disability types were more likely to report a stalking victimization than female respondents and males with no disability or only one disability type.

Summary of Stalking Victimization Results

In sum, each of the three unique operationalizations of disability status (e.g., any disability, type of disability, and the number of disability types) was significantly associated with an increased likelihood of stalking victimization. Similar to the results reported for the sexual victimization models, the relationship between disability status and stalking victimization was robust and could be observed even after controlling for potential risk factors of stalking victimization derived from the lifestyles-routine activities framework. Although, on average, the results provide evidence that disability status affects males' and females' risk of stalking similarly, two of the estimated models report significant interaction effects. When interpreted, these interactions terms suggest that the risk of being a stalking victim for males with physical disabilities and males with two or more disability types varied significantly from their counterparts in the sample. In particular, the results provide support that physical disability and

multiple type disability have a stronger effect on stalking victimization for males in comparison to females.

SUPPLEMENTAL ANALYSES

In addition to the measures of sexual and stalking victimization, the NCHA-II survey instrument also includes additional measures of victimization. To provide support that disability status is also a risk factor for other forms of victimization besides sexual violence, supplemental models were estimated for two non-sexual victimizations included in the data, physical assault and verbal threat. The bivariate and multivariate results for these models are presented in Appendices H and I. Supportive of the results presented for sexual and stalking victimization, each of the three operationalizations of disability were significantly related to physical assault and verbal threat victimization. Another relevant similarity between the results for these additional outcome measures and those for the sexual and stalking victimization models is that, once again, students with mental disabilities and two or more disability types experienced the greatest odds of reporting a victimization than their counterparts. Despite the fact that physical assault and verbal threat victimization have opportunity structures that are theoretically distinct from sexual violence and stalking, the measures of disability were still found to be significant risk factors for victimization. These results provide additional support that the relationship between disability status and victimization risk is valid and relevant to examine in closer depth.

LIFESTYLE ROUTINE ACTIVITIES

Table 4.11 presents a summary of the results for the demographic characteristics and lifestyles-routine activities measures from the binary logistic regression models for sexual assault, sexual touch without consent, rape, and stalking victimization. Full models with odds

Table 4.11: Summary of the Demographic Characteristics and Lifestyles-Routine Activities Results from the Binary Logistic Regression Models[1]

	Sexual Assault	Sexual Touch Without Consent	Rape	Stalking
Demographic Characteristics				
Race	-	-	-	-
Age	-	-	-	-
Enrollment Status	-	-	NS	NS
C or Below Average	+	+	NS	+
No GPA	NS	NS	NS	NS
University Type	NS	-	NS	NS
Exposure				
Alcohol Use	+	+	+	NS
Binge Drinking	+	+	+	NS
Marijuana Use	+	+	+	+
Serious Drug Use	+	+	+	+
Number of Sex Partners	+	+	+	+
Fraternity/Sorority Membership	NS	NS	+	NS
Athletic Participation	NS	NS	NS	NS
Volunteering	+	+	NS	+
Proximity				
Off-Campus Housing	-	-	NS	NS
Lives with Parents/Guardians	NS	NS	-	+
Employment	+	+	NS	+
Target Attractiveness				
Sexual Orientation	NS	+	NS	+
Relationship Status	-	-	NS	NS
Guardianship				
Received Crime Prevention Information	NS	NS	NS	NS
Mode of Survey Administration	NS	NS	NS	NS

* $p < 0.05$

[1] Sex, any disability, and the sex*any disability interaction effect were also included in the models but were not reported in this summary table.

ratios and 95% confidence intervals are provided in Appendices D, E, F, and G. Although this study's primary research questions concern the relationship between disability status and victimization risk, the findings for the demographic characteristics and measures of routine behaviors are also important to discuss because they shed light on the factors that shape a college student's risk of sexual and stalking victimization.

Sexual Victimization

As the results in Table 4.11 demonstrate, in addition to the disability measures, which were presented in Table 4.7, there were other significant predictors of sexual assault victimization. Several demographic characteristics were significantly related to the likelihood of sexual victimization. In particular, nonwhites and full-time students experienced a higher risk of being a sexual assault victim. Additionally, age had a significant inverse relationship with risk of sexual assault. That is, older students were less likely to report having experienced a sexual assault than younger students. Consistent with past research on sexual victimization among college students, many of the measures from the lifestyles-routine activities framework were also significantly related to sexual assault victimization. Specifically, measures of exposure to crime appeared to play the largest role in influencing whether or not a student reported a sexual assault victimization.

As found in past studies on risk factors for victimization among college students (see Tables 1.2 and 1.3 for significant predictors from past studies), alcohol consumption and risk-taking behaviors had some of the largest effects on sexual assault victimization. Both of the alcohol consumption variables, alcohol use and binge drinking, were significantly related to sexual assault risk. For instance, individuals who reported drinking any amount of alcohol were more likely to experience a sexual assault victimization than students who abstained from

drinking. This finding is consistent with past research that demonstrates that while binge drinking is typically associated with a higher risk of victimization than drinking leisurely, consuming any level of alcohol can place a student at risk of being a victim of a sexual assault.

Each of the three measures of risk-taking behaviors were also significantly related to sexual assault victimization. Students who reported using drugs, both marijuana and serious drugs, were more likely to be victimized. In addition to drug use, risky sexual practices measured by the number of consensual sexual partners was also positively related to sexual assault victimization risk; students who reported a larger number of sex partners experienced a higher risk of victimization. The exposure measure reflecting general leisure activities was also found to be significantly related to risk of sexual assault victimization. Consistent with theoretical predictions, students who reported volunteering at least one hour each week were more likely to have reported experiencing a sexual assault victimization. Neither of the two college- and school-related measures of exposure (e.g., fraternity/sorority membership and athletic participation) were significantly associated with sexual assault victimization.

Two of the proximity to crime measures were significant in the multivariate model. In terms of housing status, students that lived off-campus were less likely to report a sexual assault victimization when compared to those who lived on-campus. However, living with parents or guardians was not significantly related to sexual victimization risk. In addition, employment was positively related to the odds of being a sexual assault victim. Students who were employed were significantly more likely to report having experienced a sexual assault. Consistent with past research on sexual victimization among college students, relationship status was a significant predictor of sexual assault. In particular, being in a relationship appeared to have a protective effect on risk; students who reported not being in a relationship had a greater risk of being sexually assaulted. The other target attractiveness measure, sexual orientation, did not

significantly influence sexual assault victimization. Furthermore, the guardianship measure, received crime prevention information, was not significantly associated with the likelihood of being a sexual assault victim.

In addition to the sexual assault victimization model, Table 4.11 also presents a summary of the demographic characteristics and lifestyles-routine activities results for the other two sexual victimization measures, sexual touch without consent victimization and rape victimization. As the results in Table 4.11 demonstrate, there were only minor differences that emerged between the sexual touch without consent victimization and sexual assault victimization models. In particular, along with the significant variables discussed above for sexual assault victimization, students attending two-year institutions and individuals who reported having non-heterosexual orientations were more likely to report being sexually touched without their consent. In contrast to the previous results, there were fewer demographic characteristics and lifestyles-routine activities measures that were significantly related to rape victimization. However, the overall pattern of the results was consistent with the findings from the sexual assault victimization and sexual touch without consent victimization models; exposure to crime measures, particularly alcohol consumption and risky behaviors, play a large role in shaping a student's risk of rape victimization.

Stalking Victimization

Table 4.11 presents a summary of the demographic characteristics and lifestyles-routine activities results from the multivariate binary logistic regression model for stalking victimization. Consistent with past research on stalking victimization among college students, there were several demographic characteristics and routine behaviors that were found to be significantly related to stalking victimization risk. Out of the demographic characteristics, the individual-level

factors were more predictive of stalking victimization than the school-related demographics. For instance, nonwhites, and younger students were all significantly more likely to report having been a victim of stalking. The only school-related characteristics that was associated with stalking victimization was C or below average GPA. That is, in comparison to students with above average GPAs, those with at or below average grades had an elevated risk of stalking victimization. Furthermore, some of the lifestyles-routine activities measures were also associated with stalking victimization risk. For exposure to crime, risk-taking behaviors and general leisure activities played the largest role in shaping risk of stalking victimization. In particular, students who reported using drugs, either marijuana or more serious drugs, were more likely to report a stalking victimization than students who abstained from drug use. Additionally, students who reported having a greater number of sexual partners and those who volunteered weekly experienced an elevated risk of being stalked in comparison to their respective counterparts.

Two of the proximity measures were also significantly related to an increased risk of stalking victimization. Consistent with Mustaine and Tewksbury's (1999) study and theoretical expectations, students who were employed (i.e., those that worked at least one hour per week) were more likely to report having been stalked than those who were unemployed. Furthermore, living with parents or guardians was found to be related to an increased likelihood of experiencing a stalking victimization. Only one of the target attractiveness measures was significantly related to stalking victimization risk, sexual orientation. Non-heterosexual students (i.e., gays, lesbians, and those who are unsure) were more likely to report experiencing a stalking victimization. Similar to the sexual victimization models, the guardianship measure, received crime prevention information, was not found to be statistically significant and related to stalking victimization.

SUMMARY

This chapter presented bivariate and multivariate results that explored the relationship between disability status and victimization risk among a large-scale sample of college students in the United States. Consistent with theoretical expectations and past research, students who reported having disabilities were significantly more likely to report having experienced a wide-range of types of victimization (e.g., sexual assault, sexual touch without consent, rape, stalking, physical assault, and verbal threats) than students without disabilities. Of particular relevance is the finding that the relationship between disability status and victimization risk that was reported in the bivariate analyses persisted even after controls for demographic characteristics and measures of lifestyles and routine activities were included in multivariate models. The theoretical implications and substantive contribution of these results, as well as closing thoughts, will be discussed in more depth in the following chapter (Chapter 5).

Chapter 5

DISCUSSION

This chapter provides a more detailed discussion of the results presented in Chapter 4 regarding the relationship between disability status and sexual and stalking victimization. First, a summary of the key findings from the bivariate and multivariate results will be discussed, followed by a discussion of how this study has extended and improved upon past research. Next, implications for both prevention and policy will be explored; focusing on what specifically college and university administration can do to help address victimization risk among college students with disabilities. This dissertation will conclude with a discussion of the study's limitations, implications for future research, and closing thoughts.

SUMMARY OF RESULTS

Prevalence of Disability

Consistent with the findings from the Cooperative Institutional Research Program Survey (CIRP) and the National Postsecondary Student Aid Study (NPSAS), the results from this analysis demonstrate that students with disabilities comprise a notable proportion of the average student body. In particular, this study found that approximately 15% of the respondents reported having at least one of the twelve disabilities that comprised the disability measure utilized in this study. This prevalence estimate is slightly higher than, but similar to, the estimates provided by NPSAS (11%), but over twice as large as the estimate from CIRP (6%). However, the difference in rates between CIRP and ACHA is most likely due to the inclusion of mental disabilities in this study; a group that comprised approximately 43% of the students with disabilities in this sample and 24% in the NPSAS data. A comparison of the proportion of students with disabilities between

CIRP, NPSAS, and ACHA demonstrate that despite some differences in numbers (which would be expected based on the varying operationalizations of disability), on average, the prevalence estimates from this analysis are consistent with the other national-level studies of college students. In sum, the finding that a significant proportion (15%) of the sample reported having a disability provides support that a closer examination of the relationship between disability status and victimization risk is warranted and valuable for shedding light on an understudied, but important topic.

Bivariate Results

To estimate the prevalence of victimization among students with disabilities, bivariate analyses were conducted. These analyses, which were presented in Tables 4.3-4.6, paint a very interesting picture in regards to the relationship between disability status and sexual and stalking victimization. For stalking victimization and each of the three sexual victimizations measures, there was a larger proportion of victims among students with disabilities. This pattern was observed not only for the most inclusive measure of disability (i.e., the dichotomous measure, any disability), but also for some of the disability types (e.g., physical, mental, and learning disabilities). Significance tests demonstrate that in comparison to students without disabilities, there was a consistently larger proportion of victims among students who reported having a disability. Although some of the findings should be interpreted cautiously due to small cell frequencies (particularly for the individual disabilities and multiple type categories), the results indicate that based on their proportion in the population, students who had any of the disabilities that comprised the physical, mental, or learning disability groups reported, on average, more sexual and stalking victimization incidents.

Several of the prevalence estimates for the number of disability type combinations are particularly informative. The bivariate analyses indicate that there was a greater proportion of victims among the multiple type groupings in comparison to students without disabilities or with disabilities categorized in only one type of disability. This finding could suggest that while risk of victimization appears to be concentrated more disproportionately among individuals with disabilities, within the disability population, it also appears to be concentrated more heavily among those with multiple impairments. Taken together, the results from the bivariate analyses examining the extent of victimization among students with disabilities provide evidence that disability status plays an important role in shaping victimization risk. Furthermore, as evidenced in the results from the multivariate models, which will be discussed in more detail below, this relationship persisted even after controlling for other potential risk factors from the lifestyles-routine activities framework that could account for the positive association between disability status and sexual and stalking victimization risk.

Multivariate Results

Similar to the results from the bivariate analyses, and consistent with theoretical expectations and past research, the findings from the multivariate binary logistic regression models indicate that disability status is an important risk factor for sexual and stalking victimization. For each of the 12 multivariate models presented in Chapter 4 (i.e., three models for each of the four primary dependent variables), the relationship between disability and victimization risk was statistically significant and in the correct hypothesized direction. Table 5.1 provides a summary of the main effects for the three operationalizations of disability (e.g., any disability, type of disability, number of disability types) and the sexual victimization (e.g., sexual assault, sexual touch without consent, and rape) and stalking victimization measures. A

Table 5.1: Summary of the Disability Results from the Binary Logistic Regression Models[1]

Variable	Sexual Assault AOR (95% CI)	Sexual Touch Without Consent AOR (95% CI)	Rape AOR (95% CI)	Stalking AOR (95% CI)
Any Disability				
Disability	1.711* (1.504,1.948)	1.738* (1.488,2.030)	1.895* (1.600,2.245)	1.579* (1.358,1.836)
Type of Disability				
Physical	1.469* (1.144,1.888)	1.523* (1.163,1.994)	1.753* (1.282,2.398)	1.078 (0.751,1.547)
Mental	1.995* (1.665,2.391)	2.105* (1.756,2.525)	2.101* (1.706,2.588)	1.755* (1.348,2.284)
Learning	1.159 (0.967,1.387)	1.119 (0.901,1.390)	1.122 (0.836,1.506)	1.321* (1.037,1.683)
Number of Disability Types				
One	1.648* (1.440,1.885)	1.655* (1.411,1.940)	1.866* (1.583,2.200)	1.524* (1.307,1.778)
Two or More	2.118* (1.545,2.905)	2.280* (1.672,3.109)	2.061* (1.265,3.359)	1.925* (1.326,2.795)

* $p < .05$

[1] Control variables included: sex, age, race, enrollment status, grade point average, university type, mode of survey administration, binge drinking, alcohol use, marijuana use, serious drug use, number of sexual partners, fraternity/sorority membership, athletic participation, volunteers, housing, employment, relationship status, sexual orientation, and received crime prevention information.

Table 5.2: Simplified Summary of the Disability Results for Primary and Secondary Dependent Variables

	Sexual Assault	Sexual Touch Without Consent	Rape	Stalking	Physical Assault	Verbal Threat
Any Disability						
Disability	Sig.	Sig.	Sig.	Sig.	Sig.	Sig.
Type of Disability						
Physical	Sig.	Sig.	Sig.	NS	Sig.	Sig.
Mental	Sig.	Sig.	Sig.	Sig.	Sig.	Sig.
Learning	NS	NS	NS	Sig.	Sig.	Sig.
Number of Disability Types						
One	Sig.	Sig.	Sig.	Sig.	Sig.	Sig.
Two or More	Sig.	Sig.	Sig.	Sig.	Sig.	Sig.

* $p < .05$

[1] Control variables included: sex, age, race, enrollment status, grade point average, university type, mode of survey administration, binge drinking, alcohol use, marijuana use, serious drug use, number of sexual partners, fraternity/sorority membership, athletic participation, volunteers, housing, employment, relationship status, sexual orientation, and received crime prevention information.

simplified summary of the disability results for the primary (e.g., sexual assault, sexual touch without consent, rape, stalking) and secondary (e.g., physical assault, verbal threat) dependent variables are presented in Table 5.2. As the results from the tables demonstrate, disability status was robust risk factor for victimization. On average, across each of the models, the any disability measure, two of the three disability type measures (e.g., physical and mental), and each of the number of disability type measures (e.g., one type, two or more types) were significantly related to an elevated odds of victimization. Of particular importance is the finding that these significant and positive relationships could be observed even after controlling for known risk factors for victimization derived from the lifestyles-routine activities framework. That is, individuals with disabilities experienced a greater risk of sexual and stalking victimization regardless of their own lifestyles and routine behaviors such as alcohol consumption, drug use, and risky sexual behaviors.

Although the general trends across the models are supportive of the relationship between disability status and victimization risk, there are some notable findings that emerged from the multivariate models that are worth mentioning. One such finding is that students with learning disabilities did not appear to be at an increased risk of sexual victimization (e.g., sexual assault, sexual touch without consent, and rape) like their counterparts with physical or mental disabilities. Although these null findings should be interpreted with caution, the nonsignificant relationship between learning disability and sexual victimization risk could be justified by theoretical and empirical explanations. For instance, despite the fact that Casteel et al.'s (2008) analysis did not specifically examine type of disability in their analysis, they did dichotomize disability into two groups: moderate disabilities and severe disabilities. In turn, they found that while women with moderate disabilities were not significantly more likely to experience a sexual

assault than women without disabilities, individuals with severe disabilities were four times more likely to report having experienced a sexual victimization.

Drawing from these findings, it could be argued that in comparison to physical and mental disabilities, learning disabilities are more mild impairments and may theoretically be more weakly associated with victimization risk. That is, from an offender's perspective, individuals with learning disabilities may be perceived as less vulnerable sexual assault victims than individuals with physical or mental impairments. For instance, a potential offender may perceive someone with a learning disability as less vulnerable and therefore more likely to resist attack, contact authorities, and acknowledge high risk situations prior to an act. Additionally, unlike physical and mental disabilities that are more easily identified upon sight or interaction, learning disabilities may be less revealing. Therefore, it is possible that for students with learning disabilities, the nature of the relationship between disability status and sexual victimization risk may be indirect and influenced more by lifestyles and routine behaviors.

Results from the bivariate and multivariate models may provide support that the relationship between learning disability and sexual victimization risk is indirect in nature. For instance, although at the bivariate level, there was, on average, a greater proportion of sexual victims among students with learning disabilities, once full models were estimated and lifestyles-routine activities and demographic characteristics were entered into the model, learning disability was not significant. It may be that individuals with learning disabilities are more likely to partake in risky behaviors or have lifestyles that place them at risk for sexual victimization. However, it is important to note that there was a significant direct relationship between stalking victimization and learning disability, as well as for the outcome measures from the supplemental analyses (i.e. physical assault and verbal threat), in the multivariate models that was consistent with theoretical expectations and hypotheses.

Another notable finding that emerged from the analyses is that risk of victimization appeared to not only differ significantly between individuals with and without disability, but also between students with and without multiple types of disabilities. Each of the multivariate models using the number of disability types operationalization of disability found that students with two or more types of disabilities were at an elevated risk of experiencing a wide-range of victimizations (e.g., sexual assault, sexual touch without consent, rape, stalking, physical assault, and verbal threat) in comparison to students with only one type of disability. This finding is particularly interesting because it supports the results from the bivariate analyses which indicate that among the disability population, victimization risk is more heavily concentrated among individuals with multiple disability types. That is, net of the other risk factors included in the model (i.e., measures derived from the lifestyles-routine activities framework), students with multiple disability types were significantly more likely to report having experienced one of the victimizations examined in this analysis.

The finding that risk of victimization is not evenly distributed within the disability community is not new to this field of research. For instance, one of the largest national-level victimization studies conducted in the United States, the National Crime Victimization Survey (NCVS), found evidence of the non-random distribution of violent victimization among individuals with disabilities. According to 2007 NCVS estimates, 56% of all violent victimizations (e.g., violent and sexual offenses) that were experienced by individuals with disabilities were reported by respondents with more than one disability type[9] (Rand and Harrell, 2009). Furthermore, Casteel et al.'s (2008) finding that individuals with severe disabilities are at a greater risk of sexual victimization is also supportive of this argument. Casteel and her

[9] The NCVS utilized the definition of disability from the American Community Survey. The ACS outlines six disability types: 1) cognitive functioning limitation; 2) sensory limitation; 3) physical limitation; 4) self-care limitation; 5) going-outside-home limitation; and 6) employment limitation.

colleagues operationalized severe disability on a scale that took into account both the presence of a disability as well as the extent of activity limitations due to the disability. Although this current study is not able to rank disability on a severity scale, it can be argued that the measure of two or more disability types could act as a proxy for severity. Therefore, although Casteel et al.'s operationalization is different from this study, the results presented in Chapter 4 are supportive of their findings. Additionally, along with the measure of the number of disability types, the type of disability measures from this analysis also provide evidence that victimization is non-randomly distributed within the disabilities community. For instance, across each of the four primary multivariate models, as well as, the two supplementary models, mental disability was consistently associated with the largest adjusted odds ratio. That is, in comparison to students with physical and learning disabilities, those with mental disabilities appeared to experience the greatest risk of victimization.

Another notable finding that emerged from the multivariate results is that, on average, the positive relationship between disability status and victimization was not dependent upon a respondent's sex. For instance, out of the 18 models estimated, including the supplemental analyses presented in Appendices H and I, only two interaction effects were statistically significant. The lack of significant interaction effects provides evidence that disability affects victimization risk for males and females similarly. This finding has valuable implications for both prevention and past research. For prevention, it lends evidence that programs geared towards reducing risk among individuals with disabilities should be applied to both males and females. This finding also helps to bolster results from past research. For instance, a great number of the studies that have examined victimization among individuals with disabilities utilize female-only samples which raise questions concerning the generalizability of the findings

to males also. However, the results presented in this study provide support that the findings from past research can apply to both sexes and not only to females with disabilities.

CONTRIBUTIONS OF THE CURRENT STUDY

There are several ways in which this study has extended upon past research that are worth noting. These extensions include: 1) the inclusion of controls for demographic characteristics and measures from the lifestyles-routine activities theory in multivariate models; 2) examining the relationship between disability status and victimization among a sample of college students; 3) utilizing a wide-range of victimization types, particularly stalking victimization; and 4) the use of a detailed operationalization of disability. Each of the following extensions has made a valuable contribution to the body of research regarding the relationship between disability status and victimization risk.

Contribution #1

One of the most important contributions of this study is the inclusion of demographic characteristics and measures of lifestyles and routine activities in the analyses. Although a notable number of researchers have examined the prevalence and odds of victimization among samples of individuals with disabilities, very few of the past studies controlled for other potential risk factors of victimization that could account for the observed relationship between disability status and victimization. Due to this limitation, it is difficult to take stock of the research and draw firm conclusions because of the possibility that the reported relationship could be spurious due to model misspecification and the failure to control for rival hypotheses. However, this study was able to address this limitation of past research by not only controlling for demographic characteristics that could influence the relationship, but also for behavioral and lifestyle characteristics that could shape risk such as risky behaviors (e.g., alcohol consumption, drug use,

number of sexual partners) and everyday activities (e.g., housing status, employment, relationship status). By controlling for measures derived from the lifestyles-routine activities framework, this study was able to provide evidence that the positive relationship presented in past studies was not spurious. That is, the fact that the disability variables retained their significance after known risk factors for victimization among college students were included in the multivariate models, lends greater support that disability status does play a real role in shaping an individual's victimization risk.

The positive relationship between disability status and stalking and sexual victimization that was observed in the multivariate models is consistent with theoretical expectations from the lifestyles-routine activities framework. The lifestyles-routine activities framework assumes that offenders are rational and that, as Cohen and Felson (1979) contend, they select crime targets that are both attractive (i.e., that possess material or symbolic desirability) and low in guardianship (i.e., effectiveness of objects or persons to prevent crime). Drawing from this theory, with all else being equal, individuals with disabilities may be at an increased risk of victimization in comparison to those with no disabilities because their physical or mental characteristics lead potential offenders to perceive them as more suitable targets. For instance, an individual with a visual disability may be perceived as a suitable target simply because an offender believes the likelihood of apprehension is low due to the sight impairment.

The findings from this study also provide support for Finkelhor and Asdigian's (1996) concept of target congruence, an extension of the lifestyles-routine activities framework. Finkelhor and Asdigian (1996) assert that individuals with higher levels of target vulnerability (i.e., characteristics such as small size or physical weaknesses that make individuals easy crime targets or hinder their ability to resist and offender) and target antagonism (i.e., characteristics that arouse anger or other negative emotions in offenders) will be more likely to experience

victimization. The results from the multivariate models are consistent with Finkelhor and Asdigian's (1996) hypotheses. For instance, individuals with physical and mental disabilities may be more likely to be victimized because they are viewed as more physically or emotionally vulnerable than individuals without disabilities. Furthermore, the consistently significant effect of mental disability on victimization risk could also be explained in light of target antagonism; individuals with mental disabilities may possess characteristics or act in a particular manner that incites or provokes offenders. It is important to note that hypotheses based on target antagonism are not blaming victims or stating that victims with disabilities are responsible for their victimization, but simply that characteristics of the victim (e.g., disability status) are taken into account by potential offenders and in turn may influence the likelihood that they will be victimized.

In sum, the contribution of examining the relationship between disability status and victimization risk from within the framework of the lifestyles-routine activities theory is not only valuable for taking into account known risk factors of victimization, but also for providing a theoretical framework that can help to shed light on the underlying mechanisms that could be responsible for the observed, positive effect of disability status on sexual violence and stalking victimization.

Contribution #2

Another important contribution of this study is that it established that disability status is a relevant and significant risk factor for sexual and stalking victimization specifically among the population of college students with disabilities. Although much past research demonstrates that college students are at increased risk of victimization in comparison to adults in the general population (see Chapter 1), very little is known about risk of victimization among a sub-sample

of college students with disabilities. This gap in the research is problematic given the fact that college students with disabilities are members of two high risk populations: 1) college students and 2) individuals with disabilities. Through the utilization of a national-level, large-scale sample of college students with and without disabilities, this study was able to establish that college students with disabilities have an increased risk of a wide-range of victimizations in comparison to their counterparts without disabilities. This finding is not only relevant because it explores victimization risk among a notable, but understudied, sub-sample of the average post-secondary student body, but also because it lends support to the body of past research that disability is a risk factor for victimization across the lifecourse. For instance, along with past findings that children and adults with disabilities experience an increased risk, this study provides evidence that young adults aged 18-25 are at elevated risk as well.

Contribution #3

The third relevant contribution of this study is that it examined the relationship between disability status and stalking victimization. Unlike the body of research that has explored risk of sexual victimization among individuals with disabilities, no studies have examined if individuals with disabilities will be at an increased risk of stalking victimization. That is, while there are theoretical explanations that can explain why individuals with disabilities may be at an increased risk of stalking victimization (see Chapter 2), no past research has demonstrated if this is an empirical reality. The results from this study in regards to the significant, positive relationship between disability status and stalking victimization are valuable for not only shedding light on this relationship, but also for establishing that disability status appears to be a significant predictor for a wide-range of victimizations (e.g., sexual victimization, physical assault, and verbal threats), each with their own unique opportunity structure.

As discussed above, the lifestyles-routine activities theory can account for these positive relationships. Drawing from the assumption that offenders are rational thinkers, regardless of the crime type, they should, theoretically, seek the most vulnerable crime targets that meet their needs. It can therefore be argued that although each of the types of victimization examined in this analysis vary in their opportunity structure (i.e., the factors that must converge for a victimization to take place), individuals with disabilities could be viewed as more vulnerable or attractive targets for each type of victimization in comparison to individuals without disabilities. Additionally, in conjunction with the sexual victimization findings, the results from the stalking models are beneficial because they contradict the inaccurate, but often-held belief that individuals with disabilities are non-sexual and therefore less likely than individuals without disabilities to be viewed as potential romantic partners to others.

Contribution #4

One of the greatest strengths of this current study relates to the operationalization of disability. Because ACHA's NCHA-II survey instrument asks respondents about specific disabilities, this study was able to operationalize disability is three different ways: 1) any disability; 2) type of disability; and 3) the number of disability types (see Chapter 3 for detailed discussion of the operationalization of the disability measures). For instance, the first measure, a broad dichotomous disability measure, allowed this study to determine if the presence of any disability influenced victimization risk. However, due to concerns that the dichotomous dummy measure could potentially mask significant differences in risk across disability types, a second operationalization of disability was utilized, type of disability. The measures that comprise type of disability (e.g., physical disability, mental disability, and learning disability) were very valuable for exploring if risk was a function of disability type or if risk of victimization was

greater for one type versus another. This is a great contribution because besides the NCVS, which found no significant differences across disability types (Rand and Harrell, 2009; Harrell and Rand, 2010), few studies have compared risk across types of disability within the same study. However, based on the results presented here, type may play an important role in shaping risk. For instance, students with mental disabilities consistently experienced a higher risk of victimization, while in contrast, those with learning disabilities were, on average, less likely to be victimized than students with either physical or mental disabilities.

In addition to examining specific types of disability, this study was also able to operationalize disability by the number of disability types. By summing across the three type of disability measures, this study created a disability measure that tapped into elements of disability severity. This measure allowed this study to examine if students with more than two types of disabilities were at an increased risk of victimization in comparison to students with only one type of disability. The number of disability types measures (e.g., one type, two or more types) were valuable for exploring the finding from the 2007 NCVS that type of disability did not significantly influence risk, but instead the number of disability types (Rand and Harrell, 2009). For instance, data from the NCVS indicates that individuals with more than one disability type were significantly more likely to experience a victimization than individuals who reported having only one type of disability. Taken together, these three operationalizations of disability permitted this study to establish if disability status was related to victimization risk, while also exploring the potential differences across disability groupings (e.g., type of disability, number of disability types).

It is important to note that operationalizing disability is complicated by the fact that disability is both a theoretical concept and medical diagnosis, and that there is no uniform method for operationalizing the concept in past research. Because of this, certain criteria had to

be set when defining disability that may have resulted in disability measures that have excluded or included disabilities utilized in other studies. However, despite differences in the composition of the disabilities that comprise the disability measures, the results presented in this study are supportive of past research on individuals with disabilities and therefore provide support for the validity of the disability measures.

PREVENTION AND POLICY IMPLICATIONS

The results from this analysis provide valuable insights into the prevention and policy implications that arise from the finding that college students with disabilities are at an increased risk of victimization. The most obvious prevention implication that emerges from this study concerns the need to target crime prevention methods at students with disabilities. Unlike for other high-risk populations (e.g., binge drinkers, drug abusers), the disability population is unique because it has a college- or university-level service department (most commonly referred to as the Office of Disability Services) that is available to assist all students with disabilities. In turn, this internal department provides a very valuable avenue in which to distribute prevention information to the target population, students with disabilities. For instance, all students with disabilities that want to utilize disability services during their educational experience (e.g., extended time for assignments/exams, note takers, use of special audio equipment) must register with disabilities services, and therefore are exposed to both the disability services office and the staff. Due to the high volume and access to students with disabilities, disability services offers a valuable context in which victimization prevention and awareness can be targeted to students.

One way that disability services can help to address victimization among students with disabilities is to distribute pamphlets that contain information on victimization. Figure 5.1 provides an illustration of a pamphlet designed to raise awareness on victimization risk among

students with disabilities that could be displayed at disability services and/or distributed to students at orientation meetings or upon registration for services. Informational pamphlets could be a valuable way to help educate students on their risk of victimization as well as familiarize them with victimization resources (e.g., the contact numbers for university police or campus victimization services). In addition to providing students with information on their risk of being a victim, as illustrated in Figure 5.1, pamphlets could also be created that include prevention tips based on known risk factors for victimization (i.e., risk factors identified by the lifestyles-routine activities framework). For instance, disability services can help to reduce risk among this population by distributing information on such topics as safety while consuming alcohol, safe sex practices, and how to handle relationship difficulties. In addition to distributing information to students in person (either on display in the office or during student registration), disability services could also utilize electronic means of communication. For instance, information on victimization prevention and risk reduction could be distributed through disability service's listserv of student email addresses, as well as links on disability service's website that could raise awareness on the issue and safety among this population.

In addition to prevention implications, this study also has valuable implications for university or college policy in regards to providing services to students with disabilities or to students who have experienced a victimization. Due to the relative lack of information on this topic, one of the most important policy recommendations that emerges from these results concerns the need for raising awareness on this issue among university and college administrators. Raising awareness on this issue, and recognizing the need to address it, is a valuable first step that IHE's can take to reduce risk of victimization among students with disabilities and improve the services they are providing to this population. One easy-to implement method for addressing this issue regards improving communication between

Figure 5:1: Example of Informational Pamphlet for Students at Disability Services

Are You At Risk of Being a Victim?

Did you know that 13 out of every 100 students with a disability will be sexually assaulted while attending college?

Did you know that 6 out of every 100 students with a disability will be raped while attending college?

Did you know that 8 out of every 100 students with a disability will be physically assaulted while attending college?

Did you know that students with disabilities are more likely to be a victim of a crime than students without disabilities?

If you would like to learn more about your risk of being a victim and what you can do to help to reduce your risk, please visit www.university.edu/disabilityservices/victimization for more information or ask to talk with one of the staff at Disability Services.

No One Deserves to be a Victim

To report a crime, please contact University Police at (555) 555-5555.

If you would like to talk to a trained professional about a victimization you have experienced, please contact University Victimization Services Center at (555) 555-5555.

disability services and victimization services on campuses. Due to the potential overlap between these service agencies (i.e., students with disabilities that have been victims), it is important that each department is knowledgeable of each other. For instance, staff at disability services should have detailed information on the victimization services provided on campus so that if a student requests help or shows signs that they have been victimized, they will be able to refer students to the appropriate services. On the other hand, staff at victimization services, as well as campus police agencies, should have knowledge on the unique needs of students with disabilities in terms of requesting and receiving counseling or assistance, as well as reporting offenses to the police. Given this study's finding that for some mental disabilities the prevalence rate of sexual and physical victimization can be close to 25%, it is imperative that all staff at disability services and at campus victimization services be educated on victimization issues among students with disabilities and be trained to recognize signs of victimization and respond to requests for assistance by victims. Although each of these service agencies have different missions, due to the potential overlap in the service population, it is extremely valuable that disability services and campus victimization services be knowledgeable of each other and prepared to address the specific needs of this population.

There are several reasons why colleges and universities should take note of victimization among students with disabilities and make efforts to address the issue. One reason in support of greater awareness among IHE's concerns the increasing trend of what Wolf (2001) refers to as hidden disabilities. For instance, Wolf (2001) contends that the percentage of college students that report having a hidden disability (i.e., mental and learning disabilities) has been steadily increasing from the 1990's to the 2000's based on annual trends from NPSAS data. Furthermore, he argues that this trend is likely to continue with more college students reporting disabilities in the future. Given this projected increase in the proportion of college students with disabilities,

college and university administrators need to recognize this issue and begin to devise methods for reducing victimization risk among this population. Furthermore, addressing victimization among this population by taking steps to reduce risk and provide better services to victims, could be a valuable way to demonstrate to students with disabilities, and their parents/guardians, that the university or college is doing its best to improve the safety of students in this population. These types of actions could potentially lead more students with disabilities to feel comfortable attending the university and, in turn, benefit IHE's by fostering an environment that is diverse in composition.

LIMITATIONS

No study is without limitations, and this study has some limitations that are worth noting. As discussed in Chapter 3, there may be some potential concerns regarding the external validity of the results from this study. Although it was previously argued that the low response rate and non-representative sample characteristics could potentially limit the generalizability of this study's results to all college students in the U.S., past research on survey methodology and results from this study lends support that external validity does not appear to be a problem for this study (see Chapter 3 for full discussion). However, it is important to highlight another relevant external validity issue; particularly, that these results are only generalizable to college students and not all individuals aged 18-25. That is, the results should not be generalized to young adults not attending post-secondary institutions. For instance, it can be argued that individuals with disabilities that enroll in IHE's have disabilities that are not severe enough to hamper functions necessary to take classes and complete course requirements. Therefore, individuals with severe impairments (e.g., Down's Syndrome) are probably excluded from, or greatly underrepresented, in the sample. Based on this, and the fact that lifestyle could vary

across non-students and students, the results should not be generalized to individuals not attending post-secondary institutions or those that are younger than 18 or older than 25. However, it is important to note that although this study may be overrepresented with milder disabilities than what is observed in the general public, the analyses still found that disability status was a significant predictor of victimization risk. Once again, the finding speaks directly to the robustness of this relationship between disability status and sexual and stalking victimization risk.

Another potential limitation of this research is that there are no incident-level data. Due to this limitation, no information is available in regards to the perpetrator or location of the offense. The reason that this could potentially be a limitation is that it does not allow this study to examine if disability status is related to an increased risk of victimization for certain perpetrators only. For instance, based on hypotheses from Finkelhor and Asdigian (1996), disability status may increase risk for victimization by caregivers more than for strangers (i.e., target antagonism). Nannini's (2006) research also provides support that in comparison to individuals without disabilities, those with disabilities are more likely to report a victimization by caregivers. Incident-level information on perpetrators would be valuable for exploring this relationship more fully and establishing if risk of victimization is elevated for students with disabilities across all perpetrator types. Such information would be valuable from a prevention perspective because, for instance, violence by dating partners may require different prevention strategies than violence by strangers or family members. Similar arguments could be applied to the lack of information on the location of the victimization. For instance, it could be possible that students with disabilities are more likely to experience victimizations in different places than students without disabilities. Once again, knowledge on this information would be beneficial for developing more specific crime reduction programs that target this population. However, despite

this limitation, it is important to note that this lack of information does not invalidate the results from this study or limit the usefulness of the results, but simply highlights an area in need of further research.

A final limitation of this study that is worth noting concerns the possibility that those with cognitive impairments (e.g., mental or learning disabilities) may not provide valid responses concerning either their disability status or lifestyle characteristics. For instance, one may argue that individuals with cognitive impairments may be less likely to report that they have a disability, or that their disability status may influence the responses a respondent provides (e.g., overreporting or underreporting routine behaviors such as alcohol or drug consumption or victimization experiences). Although this is a valid concern, the probability of response bias is most likely smaller than the likelihood of bias among the general population because the sample was drawn from post-secondary institutions; a pursuit that requires a particular level of cognitive function. Secondly, research on self-reporting among individuals with mental disabilities demonstrates that the validity of responses does not appear to be a problem. For instance, Goldberg, Seybolt, and Lehman's (2002) study of individuals with schizophrenia (i.e., a more severe form of mental disability) found evidence that they could "reliably report behavioral events" (p. 881). In sum, there are no a priori reasons to expect response bias among students with disabilities.

FUTURE RESEARCH

There are several avenues for future research that if explored could help to clarify the relationship between disability status and victimization risk. From a general perspective, one of the most important areas for future research concerns the continued need for improved methodology and statistical sophistication in this field of research. As previously discussed, very

few studies have estimated multivariate models that controlled for potential control variables that could account for the relationship between disability status and victimization risk. Although this limitation is understandable due to the rarity of data sources that contain measures of disability, victimization, and theoretically-relevant controls, for this field to move forward and make the largest impact on prevention and policy, more focus needs to be placed on model specification. Related, there needs to be agreement upon the operationalization of disability and how the concept is best defined for research in this vein. The need for uniform operationalization, particularly in regards to disability type, is not only valuable for replication purposes and for drawing valid conclusions across studies, but also for other methodological concerns such as temporal order while utilizing cross-sectional samples. For instance, depression and anxiety are technically defined as mental health impairments, but could also be potential outcomes of victimization. Furthermore, it is a possibility that disability could also be the result of a victimization, particularly intimate partner physical violence. Adequately unpacking the relationship between disability status and victimization in these types of instances requires the use of longitudinal data; data that to my knowledge does not exist. Although this study has improved upon past operationalizations by including measures of disability type, there is certainly still room for future improvement.

In addition to methodological concerns, there is a greater need to utilize probability-based samples similar to the one employed in this analysis. Although large-scale, probability samples have been analyzed by some researchers (see Brownridge, 2006; Casteel et al., 2008; Martin et al., 2006; Smith, 2008), the vast amount of past research uses convenience samples and/or samples that consist only of individuals with disabilities. Despite the fact that these studies are valuable for shedding light on an understudied problem and for theory development, the lack of probability sampling or baseline rates for individuals without disabilities, limits the impact that

these studies can have on policy and prevention. These three issues (i.e., unsophisticated models, non-uniform operationalization, and the use of convenience, non-probability samples) highlight some of the methodological problems that plague research on this area, and that if addressed, could greatly improve both the validity and substantive contribution of the results.

Along with the previously discussed avenues for future research which are related generally to research regarding disability status and victimization risk, there are implications for future research that also emerge specifically from this current study. Now that it has been established that disability status appears to be a significant predictor of victimization risk among college students, the next logical step is to estimate models on sub-samples of students with and without disabilities. Although this current study argues that there is a direct relationship between disability status and victimization risk, it does not make the assumption that disability status is the only relevant risk factor for victimization. Therefore, while disability status can increase an individual's risk of victimization, other factors, particularly measures derived from the lifestyles-routine activities framework, are assumed to play a role too. The value of sub-sample analyses is that they will allow one to explore if the same risk factors for victimization (i.e., measures of lifestyle and routine behaviors) influence students with disabilities the same as students without disabilities. For instance, if the multivariate models produced similar results (e.g., alcohol consumption increased risk for both groups and the size of the coefficients did not vary significantly), it would have important implications for theory and prevention. For theory, it provides further evidence that the lifestyles-routine activities theory is a valuable framework for understanding the factors that influence an individual's victimization risk. In regards to prevention, if the same factors that increase risk among students without disabilities increased risk for students with disabilities, it demonstrates that the same prevention reduction strategies

can be employed for both groups. For instance, a drinking safety campaign targeting an entire university could potentially reduce risk in both populations.

Research that demonstrates that the risk factors for both groups are similar would also be beneficial for empowering individuals with disabilities. For example, it is sometimes assumed that individuals with disabilities are at an increased risk of victimization because of their disability status only and that they have little to no influence on their risk of victimization. However, if future analyses indicate that the lifestyles-routine activities measures also influence risk among individuals with disabilities, it can demonstrate to members of the disabilities community that although their disability status may make them more attractive to certain offenders, they can still play a large role in shaping their victimization risk. In sum, future research should continue to gain a greater understanding of victimization among individuals with disabilities, specifically exploring the underlying causal mechanism that drives the relationship. On the other hand, if such research produces results inconsistent with theoretical expectations from the lifestyles-routine activities framework, alternative explanations for the relationship between disability and victimization should be empirically tested (see Barranti and Yuen, 2008; Mays, 2006; Sobsey, 1994), or new theories that could account for the relationship should be developed.

CONCLUSION

In conclusion, this study has helped shed light on the relationship between disability status and sexual violence and stalking, and has demonstrated that college students with disabilities are at an increased likelihood of experiencing a victimization than their counterparts without disabilities. This study examined this relationship from within the lifestyles-routine activities framework which allowed for the development of theoretically-based hypotheses

concerning the relationship between disability status and victimization, and also the ability to control for a wide-range of routine behaviors that have been associated with victimization risk in past studies on college students. The results presented here should help to lend support to the previous studies that have examined the link between disability and victimization risk, while also making important extensions to the past body of research; particularly by utilizing a national-level, large-scale sample of students and for the use of refined disability and lifestyle measures. Overall, these findings demonstrate that disability as a risk factor for victimization cannot be ignored, and that more focus should be placed on gaining a greater understanding of what can be done to reduce risk of victimization among this population. Given the increasing trend of college students reporting disabilities, now is the time for researchers and college and university administrators to recognize the problem and take steps towards developing a strategy for prevention.

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Appendix A

NCHA-II Survey Instrument

ACHA NCHA II

American College Health Association **National College Health Assessment**

Instructions:

The following questions ask about various aspects of your health.

To answer the questions, fill in the oval that corresponds to your response.

Select only one response unless instructed otherwise.

Use a No. 2 pencil or blue or black ink pen only. Do not use pens with ink that soaks through the paper. CORRECT: ● INCORRECT: ✓ ✗ ◒ ⊙

This survey is completely voluntary. You may choose not to participate or not to answer any specific question. You may skip any question you are not comfortable in answering.

Please make no marks of any kind on the survey which could identify you individually.

Composite data will then be shared with your campus for use in health promotion activities.

Thank you for taking the time and thought to complete this survey. We appreciate your participation!

American College Health Association

National College Health Assessment

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Health, Health Education and Safety

1. How would you describe your general health?

○ Excellent ○ Very good ○ Good ○ Fair ○ Poor ○ Don't know

(Please mark the appropriate column for each question to the right)	2. Have you received information on the following topics from your college or university?		3. Are you interested in receiving information on the following topics from your college or university?	
	No	Yes	No	Yes
Alcohol and other drug use	○	○	○	○
Cold/Flu/Sore throat	○	○	○	○
Depression/Anxiety	○	○	○	○
Eating disorders	○	○	○	○
Grief and loss	○	○	○	○
How to help others in distress	○	○	○	○
Injury prevention	○	○	○	○
Nutrition	○	○	○	○
Physical activity	○	○	○	○
Pregnancy prevention	○	○	○	○
Problem use of Internet/computer games	○	○	○	○
Relationship difficulties	○	○	○	○
Sexual assault/Relationship violence prevention	○	○	○	○
Sexually transmitted disease/infection (STD/I) prevention	○	○	○	○
Sleep difficulties	○	○	○	○
Stress reduction	○	○	○	○
Suicide prevention	○	○	○	○
Tobacco use	○	○	○	○
Violence prevention	○	○	○	○

4. Within the **last 12 months**, how often did you:

(Please mark the appropriate column for each row)

	Always	Most of the time	Sometimes	Rarely	Never	N/A, did not do this activity within the **last 12 months**
Wear a seatbelt when you rode in a car?	○	○	○	○	○	○
Wear a helmet when you rode a bicycle?	○	○	○	○	○	○
Wear a helmet when you rode a motorcycle?	○	○	○	○	○	○
Wear a helmet when you were inline skating?	○	○	○	○	○	○

5. Within the **last 12 months**:

(Please mark the appropriate column for each row)

	Yes	No
Were you in a physical fight?	○	○
Were you physically assaulted (do not include sexual assault)?	○	○
Were you verbally threatened?	○	○
Were you sexually touched without your consent?	○	○
Was sexual penetration attempted (vaginal, anal, oral) without your consent?	○	○
Were you sexually penetrated (vaginal, anal, oral) without your consent?	○	○
Were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated emails/phone calls)?	○	○

6. Within the **last 12 months**, have you been in an intimate (coupled/partnered) relationship that was:

(Please mark the appropriate column for each row)

	Yes	No
Emotionally abusive? (e.g., called derogatory names, yelled at, ridiculed)	○	○
Physically abusive? (e.g., kicked, slapped, punched)	○	○
Sexually abusive? (e.g., forced to have sex when you didn't want it, forced to perform or have an unwanted sexual act performed on you)	○	○

7. How safe do you feel:

(Please mark the appropriate column for each row)

	Very safe	Somewhat safe	Somewhat unsafe	Not safe at all
On this campus (daytime)?	○	○	○	○
On this campus (nighttime)?	○	○	○	○
In the community surrounding this school (daytime)?	○	○	○	○
In the community surrounding this school (nighttime)?	○	○	○	○

Alcohol, Tobacco, and Drugs

8. Within the **last 30 days**, on how many days did you use:

(Please mark the appropriate column for each row)

	Never used	Have used, but not in last 30 days	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	Used daily
Cigarettes	○	○	○	○	○	○	○	○
Tobacco from a water pipe (hookah)	○	○	○	○	○	○	○	○
Cigars, little cigars, clove cigarettes	○	○	○	○	○	○	○	○
Smokeless tobacco	○	○	○	○	○	○	○	○
Alcohol (beer, wine, liquor)	○	○	○	○	○	○	○	○
Marijuana (pot, weed, hashish, hash oil)	○	○	○	○	○	○	○	○
Cocaine (crack, rock, freebase)	○	○	○	○	○	○	○	○
Methamphetamine (crystal meth, ice, crank)	○	○	○	○	○	○	○	○
Other amphetamines (diet pills, bennies)	○	○	○	○	○	○	○	○
Sedatives (downers, ludes)	○	○	○	○	○	○	○	○
Hallucinogens (LSD, PCP)	○	○	○	○	○	○	○	○
Anabolic steroids (Testosterone)	○	○	○	○	○	○	○	○
Opiates (heroin, smack)	○	○	○	○	○	○	○	○
Inhalants (glue, solvents, gas)	○	○	○	○	○	○	○	○
MDMA (Ecstacy)	○	○	○	○	○	○	○	○
Other club drugs (GHB, Ketamine, Rohypnol)	○	○	○	○	○	○	○	○
Other illegal drugs	○	○	○	○	○	○	○	○

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9. Within the **last 30 days**, how often do you think **the typical student at your school** used:

(State your best estimate; Please mark the appropriate column for each row)

	Never used	Have used, but not in last 30 days	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	Used daily
Cigarettes	○	○	○	○	○	○	○	○
Tobacco from a water pipe (hookah)	○	○	○	○	○	○	○	○
Cigars, little cigars, clove cigarettes	○	○	○	○	○	○	○	○
Smokeless tobacco	○	○	○	○	○	○	○	○
Alcohol (beer, wine, liquor)	○	○	○	○	○	○	○	○
Marijuana (pot, weed, hashish, hash oil)	○	○	○	○	○	○	○	○
Cocaine (crack, rock, freebase)	○	○	○	○	○	○	○	○
Methamphetamine (crystal meth, ice, crank)	○	○	○	○	○	○	○	○
Other amphetamines (diet pills, bennies)	○	○	○	○	○	○	○	○
Sedatives (downers, ludes)	○	○	○	○	○	○	○	○
Hallucinogens (LSD, PCP)	○	○	○	○	○	○	○	○
Anabolic steroids (Testosterone)	○	○	○	○	○	○	○	○
Opiates (heroin, smack)	○	○	○	○	○	○	○	○
Inhalants (glue, solvents, gas)	○	○	○	○	○	○	○	○
MDMA (Ecstacy)	○	○	○	○	○	○	○	○
Other club drugs (GHB, Ketamine, Rohypnol)	○	○	○	○	○	○	○	○
Other illegal drugs	○	○	○	○	○	○	○	○

One drink of alcohol is defined as a 12 oz. can or bottle of beer or wine cooler, a 4 oz. glass of wine, or a shot of liquor straight or in a mixed drink.

10. The **last time** you "partied"/socialized how many **drinks of alcohol** did you have? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

DRINKS ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○

11. The **last time** you "partied"/socialized over how many **hours** did you drink alcohol? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

HOURS ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○

12. How many **drinks of alcohol** do you think **the typical student at your school** had the **last time** he/she "partied"/socialized? (If you think the typical student at your school does not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

DRINKS ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○ ○○

13. Over the **last two weeks**, how many times have you had five or more drinks of alcohol at a sitting?

- ○ N/A, don't drink
- ○ None
- ○ 1 time
- ○ 2 times
- ○ 3 times
- ○ 4 times
- ○ 5 times
- ○ 6 times
- ○ 7 times
- ○ 8 times
- ○ 9 times
- ○ 10 or more times

14. Within the **last 30 days**, did you:

(Please mark the appropriate column for each row)

	Yes	No	N/A, don't drink	N/A, don't drive
Drive after drinking any alcohol at all	○	○	○	○
Drive after drinking five or more drinks of alcohol	○	○	○	○

15. During the **last 12 months**, when you "partied"/socialized, how often did you:

(Please mark the appropriate column for each row)

	Never	Rarely	Sometimes	Most of the time	Always	N/A, don't drink
Alternate non-alcoholic with alcoholic beverages	○	○	○	○	○	○
Avoid drinking games	○	○	○	○	○	○
Choose not to drink alcohol	○	○	○	○	○	○
Determine, in advance, not to exceed a set number of drinks	○	○	○	○	○	○
Eat before and/or during drinking	○	○	○	○	○	○
Have a friend let you know when you have had enough	○	○	○	○	○	○
Keep track of how many drinks you were having	○	○	○	○	○	○
Pace your drinks to 1 or fewer per hour	○	○	○	○	○	○
Stay with the same group of friends the entire time you were drinking	○	○	○	○	○	○
Stick with only one kind of alcohol when drinking	○	○	○	○	○	○
Use a designated driver	○	○	○	○	○	○

16. Within the **last 12 months**, have you experienced any of the following **as a consequence of your drinking?**

(Please mark the appropriate column for each row)

	Yes	No	N/A, don't drink
Did something you later regretted	○	○	○
Forgot where you were or what you did	○	○	○
Got in trouble with the police	○	○	○
Had sex with someone **without giving** your consent	○	○	○
Had sex with someone **without getting** their consent	○	○	○
Had unprotected sex	○	○	○
Physically injured yourself	○	○	○
Physically injured another person	○	○	○
Seriously considered suicide	○	○	○

17. Within the **last 30 days**, what **percent** of students at your school used:
State your best estimate. (If less than 10, please enter 00, 01, 02, etc.)

Cigarettes % Used	Alcohol % Used	Marijuana % Used
00 01 02 03 04 05 06 07 08 09	00 01 02 03 04 05 06 07 08 09	00 01 02 03 04 05 06 07 08 09

18. Within the **last 12 months**, have you taken any of the following **prescription drugs** that were not prescribed to you?

(Please mark the appropriate column for each row)

	Yes	No
Antidepressants (e.g., Celexa, Lexapro, Prozac, Wellbutrin, Zoloft)	○	○
Erectile dysfunction drugs (e.g., Viagra, Cialis, Levitra)	○	○
Pain killers (e.g., OxyContin, Vicodin, Codeine)	○	○
Sedatives (e.g., Xanax, Valium)	○	○
Stimulants (e.g., Ritalin, Adderall)	○	○

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Sex Behavior and Contraception

19. Within the **last 12 months**, with how many partners have you had oral sex, vaginal intercourse, or anal intercourse? (If you did not have a sex partner within the last 12 months, please enter 00. If less than 10, enter 01, 02, 03, etc.) →

PARTNERS

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

20. Within **last 12 months**, did you have sexual partner(s) who were:

(Please mark the appropriate column for each row)

	Yes	No
Female	○	○
Male	○	○
Transgender	○	○

21. Within the **last 30 days**, did you have:

(Please mark the appropriate column for each row)

	Yes	No, have done this sexual activity in the past but not in the **last 30 days**	No, have never done this sexual activity
Oral sex?	○	○	○
Vaginal intercourse?	○	○	○
Anal intercourse?	○	○	○

22. Within the **last 30 days**, how often did you or your partner(s) use a condom or other protective barrier (e.g., male condom, female condom, dam, glove) during:

(Please mark the appropriate column for each row)

	Have not done this sexual activity during the **last 30 days**	N/A, never did this sexual activity	CONDOM/ BARRIER USE: Never	Rarely	Sometimes	Most of the time	Always
Oral sex?	○	○	○	○	○	○	○
Vaginal intercourse?	○	○	○	○	○	○	○
Anal intercourse?	○	○	○	○	○	○	○

23A. Did you or your partner use a method of birth control to prevent pregnancy **the last time** you had vaginal intercourse?

- ○ Yes (continue to item 23B)
- ○ N/A, have not had vaginal intercourse (skip to item 24)
- ○ No, have not had vaginal intercourse that could result in a pregnancy (skip to item 24)
- ○ No, did not want to prevent pregnancy (skip to item 24)
- ○ No, did not use any birth control method (skip to item 24)
- ○ Don't know (skip to item 24)

23B. Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy **the last time** you had vaginal intercourse. (Please mark the appropriate column for each row)

	Yes	No		Yes	No
Birth control pills (monthly or extended cycle)	○	○	Diaphragm or cervical cap	○	○
Birth control shots	○	○	Contraceptive sponge	○	○
Birth control implants	○	○	Spermicide (e.g., foam, jelly, cream)	○	○
Birth control patch	○	○	Fertility awareness (e.g., calendar, mucous, basal body temperature)	○	○
Vaginal ring	○	○	Withdrawal	○	○
Intrauterine device (IUD)	○	○	Sterilization (e.g., hysterectomy, tubes tied, or vasectomy)	○	○
Male condom	○	○	Other method	○	○
Female condom	○	○			

24. Within the **last 12 months**, have you or your partner(s) used emergency contraception ("morning after pill")?

- ○ N/A, have not had vaginal intercourse in the **last 12 months**
- ○ No
- ○ Yes
- ○ Don't know

25. Within the **last 12 months**, have you or your partner(s) become pregnant?

- ○ N/A, have not had vaginal intercourse in the **last 12 months**
- ○ No
- ○ Yes, unintentionally
- ○ Yes, intentionally
- ○ Don't know

Weight, Nutrition, and Exercise

26. How do you describe your weight?

- ○ Very underweight
- ○ Slightly underweight
- ○ About the right weight
- ○ Slightly overweight
- ○ Very overweight

27. Are you trying to do any of the following about your weight?

- ○ I am not trying to do anything about my weight
- ○ Stay the same weight
- ○ Lose weight
- ○ Gain weight

28. How many servings of fruits and vegetables do you usually have **per day**? (1 serving = 1 medium piece of fruit; 1/2 cup fresh, frozen, or canned fruits/vegetables; 3/4 cup fruit/vegetable juice; 1 cup salad greens; or 1/4 cup dried fruit)

○ 0 servings per day ○ 1–2 servings per day ○ 3–4 servings per day ○ 5 or more servings per day

29. On how many of the **past 7 days** did you:

(Please mark the appropriate column for each row)

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Do **moderate-intensity** cardio or aerobic exercise (caused a noticeable increase in heart rate, such as a brisk walk) for at least **30 minutes?**	○	○	○	○	○	○	○	○
Do **vigorous-intensity** cardio or aerobic exercise (caused large increases in breathing or heart rate, such as jogging) for at least **20 minutes?**	○	○	○	○	○	○	○	○
Do 8-10 strength training exercises (such as resistance weight machines) for 8-12 repetitions each?	○	○	○	○	○	○	○	○

Mental Health

30. Have you ever:

(Please mark the appropriate column for each row)

	Yes, in the **last 12 months**	Yes, in the **last 30 days**	Yes, in the **last 2 weeks**	No, not in **last 12 months**	No, never
Felt things were hopeless	○	○	○	○	○
Felt overwhelmed by all you had to do	○	○	○	○	○
Felt exhausted (not from physical activity)	○	○	○	○	○
Felt very lonely	○	○	○	○	○
Felt very sad	○	○	○	○	○
Felt so depressed that it was difficult to function	○	○	○	○	○
Felt overwhelming anxiety	○	○	○	○	○
Felt overwhelming anger	○	○	○	○	○
Intentionally cut, burned, bruised, or otherwise injured yourself	○	○	○	○	○
Seriously considered suicide	○	○	○	○	○
Attempted suicide	○	○	○	○	○

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31. Within the **last 12 months**, have you been diagnosed or treated **by a professional** for any of the following?

(Please mark the appropriate column for each row)

	Yes, other treatment	Yes, treated with medication and psychotherapy	Yes, treated with psychotherapy	Yes, treated with medication	Yes, diagnosed but not treated	No
Anorexia	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○	○	○	○	○
Bipolar Disorder	○	○	○	○	○	○
Bulimia	○	○	○	○	○	○
Depression	○	○	○	○	○	○
Insomnia	○	○	○	○	○	○
Other sleep disorder	○	○	○	○	○	○
Obsessive Compulsive Disorder (OCD)	○	○	○	○	○	○
Panic attacks	○	○	○	○	○	○
Phobia	○	○	○	○	○	○
Schizophrenia	○	○	○	○	○	○
Substance abuse or addiction (alcohol or other drugs)	○	○	○	○	○	○
Other addiction (e.g., gambling, internet, sexual)	○	○	○	○	○	○
Other mental health condition	○	○	○	○	○	○

32. Have you ever been diagnosed with depression? ○ No ○ Yes

33. Within the **last 12 months**, have any of the following been traumatic or very difficult for you to handle?

(Please mark the appropriate column for each row)

	Yes	No
Academics	○	○
Career-related issue	○	○
Death of a family member or friend	○	○
Family problems	○	○
Intimate relationships	○	○
Other social relationships	○	○
Finances	○	○
Health problem of a family member or partner	○	○
Personal appearance	○	○
Personal health issue	○	○
Sleep difficulties	○	○
Other	○	○

34. Have you ever received psychological or mental health services from any of the following?

(Please mark the appropriate column for each row)

	Yes	No
Counselor/Therapist/Psychologist	○	○
Psychiatrist	○	○
Other medical provider (e.g., physician, nurse practitioner)	○	○
Minister/Priest/Rabbi/Other clergy	○	○

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35. Have you ever received psychological or mental health services from your **current** college/university's Counseling or Health Service?

○ No ○ Yes

36. If in the future you were having a personal problem that was really bothering you, would you consider seeking help from a mental health professional?

○ No ○ Yes

37. Within the **last 12 months**, how would you rate the overall level of stress you have experienced?

- ○ No stress
- ○ Less than average stress
- ○ Average stress
- ○ More than average stress
- ○ Tremendous stress

Physical Health

38. Within the **last 30 days**, did you do any of the following?

(Please mark the appropriate column for each row)

	Yes	No
Exercise to lose weight	○	○
Diet to lose weight	○	○
Vomit or take laxatives to lose weight	○	○
Take diet pills to lose weight	○	○

39. Have you:

(Please mark the appropriate column for each row)

	Don't know	Yes	No
Had a dental exam and cleaning in the **last 12 months**?	○	○	○
(Males) Performed testicular self exam in the **last 30 days**?	○	○	○
(Females) Performed breast self exam in the **last 30 days**?	○	○	○
(Females) Had a routine gynecological exam in the **last 12 months**?	○	○	○
Used sunscreen regularly with sun exposure?	○	○	○
Ever been tested for Human Immunodeficiency Virus (HIV) infection?	○	○	○

40. Have you received the following vaccinations (shots)?

(Please mark the appropriate column for each row)

	Don't know	Yes	No
Hepatitis B	○	○	○
Human Papillomavirus/HPV (cervical cancer vaccine)	○	○	○
Influenza (the flu) in the **last 12 months** (shot or nasal mist)	○	○	○
Measles, Mumps, Rubella	○	○	○
Meningococcal disease (meningococcal meningitis)	○	○	○
Varicella (chicken pox)	○	○	○

41. Within the **last 12 months**, have you been diagnosed or treated **by a professional** for any of the following?

(Please mark the appropriate column for each row)

	Yes	No		Yes	No
Allergies	○	○	High blood pressure	○	○
Asthma	○	○	High cholesterol	○	○
Back pain	○	○	Human Immunodeficiency Virus (HIV)	○	○
Broken bone/Fracture/Sprain	○	○	Irritable Bowel Syndrome (IBS)	○	○
Bronchitis	○	○	Migraine headache	○	○
Chlamydia	○	○	Mononucleosis	○	○
Diabetes	○	○	Pelvic Inflammatory Disease (PID)	○	○
Ear infection	○	○	Repetitive stress injury (e.g., carpal tunnel syndrome)	○	○
Endometriosis	○	○	Sinus infection	○	○
Genital herpes	○	○	Strep throat	○	○
Genital warts/Human Papillomavirus (HPV)	○	○	Tuberculosis	○	○
Gonorrhea	○	○	Urinary tract infection	○	○
Hepatitis B or C	○	○			

42. On how many of the **past 7 days** did you get enough sleep so that you felt rested when you woke up in the morning?

○ 0 days ○ 1 day ○ 2 days ○ 3 days ○ 4 days ○ 5 days ○ 6 days ○ 7 days

43. People sometimes feel sleepy during the daytime. In the **past 7 days**, how much of a problem have you had with sleepiness (feeling sleepy, struggling to stay awake) during your daytime activities?

○ No problem at all
○ A little problem
○ More than a little problem
○ A big problem
○ A very big problem

44. In the **past 7 days**, how often have you:

(Please mark the appropriate column for each row)

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Awakened too early in the morning and couldn't get back to sleep?	○	○	○	○	○	○	○	○
Felt tired, dragged out, or sleepy during the day?	○	○	○	○	○	○	○	○
Gone to bed because you just could not stay awake any longer?	○	○	○	○	○	○	○	○
Had an extremely hard time falling asleep?	○	○	○	○	○	○	○	○

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Impediments to Academic Performance

(Please select the most serious outcome for each item below)

45. Within the **last 12 months**, have any of the following affected your academic performance?

	Significant disruption in thesis, dissertation, research, or practicum work	Received an incomplete or dropped the course	Received a lower grade in the course	Received a lower grade on an exam or important project	I have experienced this issue but my academics have not been affected	This did not happen to me/not applicable
Alcohol use	○	○	○	○	○	○
Allergies	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Assault (physical)	○	○	○	○	○	○
Assault (sexual)	○	○	○	○	○	○
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○	○	○	○	○
Cold/Flu/Sore throat	○	○	○	○	○	○
Concern for a troubled friend or family member	○	○	○	○	○	○
Chronic health problem or serious illness (e.g., diabetes, asthma, cancer)	○	○	○	○	○	○
Chronic pain	○	○	○	○	○	○
Death of a friend or family member	○	○	○	○	○	○
Depression	○	○	○	○	○	○
Discrimination (e.g., homophobia, racism, sexism)	○	○	○	○	○	○
Drug use	○	○	○	○	○	○
Eating disorder/problem	○	○	○	○	○	○
Finances	○	○	○	○	○	○
Gambling	○	○	○	○	○	○
Homesickness	○	○	○	○	○	○
Injury (fracture, sprain, strain, cut)	○	○	○	○	○	○
Internet use/computer games	○	○	○	○	○	○
Learning disability	○	○	○	○	○	○
Participation in extracurricular activities (e.g., campus clubs, organizations, athletics)	○	○	○	○	○	○
Pregnancy (yours or your partner's)	○	○	○	○	○	○
Relationship difficulties	○	○	○	○	○	○
Roommate difficulties	○	○	○	○	○	○
Sexually transmitted disease/infection (STD/I)	○	○	○	○	○	○
Sinus infection/Ear infection/Bronchitis/Strep throat	○	○	○	○	○	○
Sleep difficulties	○	○	○	○	○	○
Stress	○	○	○	○	○	○
Work	○	○	○	○	○	○
Other (please specify _____)	○	○	○	○	○	○

Demographic Characteristics

46. How old are you? → Years

47. What is your gender?
- ○ Female
- ○ Male
- ○ Transgender

48. What is your sexual orientation?
- ○ Heterosexual
- ○ Gay/Lesbian
- ○ Bisexual
- ○ Unsure

49. What is your height in feet and inches? → HEIGHT: Ft. / Inch

50. What is your weight in pounds? → WEIGHT: Pounds

51. **What is your year in school?**
- ○ 1st year undergraduate
- ○ 2nd year undergraduate
- ○ 3rd year undergraduate
- ○ 4th year undergraduate
- ○ 5th year or more undergraduate
- ○ Graduate or professional
- ○ Not seeking a degree
- ○ Other

52. **What is your enrollment status?**
○ Full-time ○ Part-time ○ Other

53. **Have you transferred to this college or university within the last 12 months?**
○ No ○ Yes

54. **How do you usually describe yourself?**
(Mark all that apply)
- ○ White, non Hispanic (includes Middle Eastern)
- ○ Black, non Hispanic
- ○ Hispanic or Latino/a
- ○ Asian or Pacific Islander
- ○ American Indian, Alaskan Native, or Native Hawaiian
- ○ Biracial or Multiracial
- ○ Other

55. **Are you an international student?**
○ No ○ Yes

56. **What is your relationship status?**
- ○ Not in a relationship
- ○ In a relationship but not living together
- ○ In a relationship and living together

57. **What is your marital status?**
○ Single ○ Divorced
○ Married/Partnered ○ Other
○ Separated

58. **Where do you currently live?**
- ○ Campus residence hall
- ○ Fraternity or sorority house
- ○ Other college/university housing
- ○ Parent/guardian's home
- ○ Other off-campus housing
- ○ Other

59. **Are you a member of a social fraternity or sorority? (e.g., National Interfraternity Conference, National Panhellenic Conference, National Pan-Hellenic Council, National Association of Latino Fraternal Organizations)**
○ No ○ Yes

60. **How many hours a week do you work for pay?**
○ 0 hours ○ 30–39 hours
○ 1–9 hours ○ 40 hours
○ 10–19 hours ○ More than 40 hours
○ 20–29 hours

61. **How many hours a week do you volunteer?**
○ 0 hours ○ 30–39 hours
○ 1–9 hours ○ 40 hours
○ 10–19 hours ○ More than 40 hours
○ 20–29 hours

62. **What is your primary source of health insurance?**
- ○ My college/university sponsored plan
- ○ My parents' plan
- ○ Another plan
- ○ I don't have health insurance
- ○ I am not sure if I have health insurance

63. **What is your approximate cumulative grade average?**
○ A ○ B ○ C ○ D/F ○ N/A

64. **Within the last 12 months, have you participated in organized college athletics at any of the following levels?**

(Please mark the appropriate column for each row)	Yes	No
Varsity	○	○
Club sports	○	○
Intramurals	○	○

65. **Do you have any of the following disabilities or medical conditions?**

(Please mark the appropriate column for each row)	Yes	No
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○
Chronic illness (e.g., cancer, diabetes, auto-immune disorders)	○	○
Deaf/Hard of hearing	○	○
Learning disability	○	○
Mobility/Dexterity disability	○	○
Partially sighted/Blind	○	○
Psychiatric condition	○	○
Speech or language disorder	○	○
Other disability	○	○

THANK YOU FOR COMPLETING THIS SURVEY

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #

Appendix B

American College Health Association's Guidelines and Recommendations for Blind or Vision Impaired Students: http://www.acha-ncha.org/docs/ACHA-NCHA_USERS_MANUAL.pdf

1. Present the situation and plans to the University Internal Review Board.

2. Arrange to have a licensed practitioner to have a private meeting with the student.

3. Introduce the survey by describing the nature of the survey and the purpose.

4. Indicate that the survey is completely voluntary.

5. Indicate that the student may refuse to answer any question.

6. List the seven content areas that the survey covers.

7. Indicate that there are sensitive questions regarding alcohol, smoking, drugs and sexuality.

8. Assure the student that any answers provided will not be used by the interviewer to recommend counseling, therapy or treatment unless the student requests the interventions.

9. Assure the student that no information provided will be documented anywhere except in the survey itself which again has no identifying information contained.

10. If subject agrees to participate read the IRB consent form and have the student sign the form or verbally accept to participate if that is the IRB instructions.

11. Read the instructions on the face of the survey.

12. Fill in the survey responses with a #2 pencil, blue or black ballpoint pen (not felt tip).

13. Skip any question that the student refuses to answer. Do not try and coax an answer.

14. Do not respond or react to any particular answer. For example if the student reports drinking 12 beers a day, make no response such as "wow that is a lot."

15. If the student is clearly lying in the response pattern just continue with the survey and note afterwards that the student may be lying and contact E. Victor Leino Ph.D. research director at ACHA 410-859-1500 ext. 239 for further instructions.

16. Thank the student for participating.

17. Return the survey to the surveyors and witness the survey being randomly inserted amongst completed stacks of surveys.

Appendix C

Original Survey Items

Dependent Variables

Sexual Assault Victimization

Within the last 12 months:

Were you sexually touched without your consent?

Responses coded as: 0 = no; 1 = yes

Was sexual penetration attempted (vaginal, anal, oral) without your consent?

Responses coded as: 0 = no; 1 = yes

Were you sexually penetrated (vaginal, anal, oral) without your consent?

Responses coded as: 0 = no; 1 = yes

Stalking Victimization

Within the last 12 months:

Were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated emails/phone calls)?

Responses coded as: 0 = no; 1 = yes

Independent Variables

<u>Disability Variables:</u>

Physical Disability

Do you have any of the following disabilities or medical conditions?

Mobility/Dexterity disability

Deaf/Hard of hearing

Partially sighted/Blind

Speech or language disorder

Responses coded as: 0 = no; 1 = yes

Learning Disability

Do you have any of the following disabilities or medical conditions?

Attention Deficit and Hyperactivity Disorder (ADHD)

Learning disability

Responses coded as: 0 = no; 1 = yes

Mental Disability

Do you have any of the following disabilities or medical conditions?

Psychiatric condition

Bipolar Disorder

Obsessive Compulsive Disorder (OCD)

Phobia

Schizophrenia

Other mental health condition

Responses coded as: 0 = no; 1 = yes

Lifestyles-Routine Activity Variables:

Binge Drinking

Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting?

Responses coded as: 0 = no; 1 = yes

Alcohol Use

The last time you "partied"/socialized how many drinks of alcohol did you have?

Responses coded as: 0 = no drinks; 1 = one or more drinks

Marijuana Use

Within the last 30 days, on how many days did you use: Marijuana (pot, weed, hashish, hash oil)

Responses coded as: 0 = no; 1 = yes

Serious Drug Use

Within the last 30 days, on how many days did you use:

Cocaine (crack, rock, freebase)
Methamphetamine (crystal meth, ice, crank)
Other amphetamines (diet pills, bennies)
Sedatives (downers, ludes)
Hallucinogens (LSD, PCP)
Opiates (heroin, smack)
Inhalants (glue, solvents, gas)
MDMA (Ecstasy)
Other club drugs (GHB, Ketamine, Rohypnol)
Other illegal drugs

Responses coded as: 1-6

Number of Sexual Partners

Within the last 12 months, with how many partners have you had oral sex, vaginal intercourse, or anal intercourse?

Responses coded as: 1-99

Fraternity/Sorority Membership

Are you a member of a social fraternity or sorority (e.g., National Interfraternity Conference, National Panhellenic Conference, National Pan-Hellenic Council, National Association of Latino Fraternal Organizations)

Responses coded as: 0 = no; 1 = yes

Athletic Participation

Within the last 12 months, have you participated in organized college athletics at any of the following levels?

Varsity
Club sports
Intramurals

Responses coded as: 0 = no; 1 = yes

Volunteers

How many hours a week do you volunteer?

Responses coded as: 0 = none; 1 = one or more

Housing

Where do you currently live?

Responses coded as: 0 = on-campus (reference group); 1 = with parents/guardians; 2 = off-campus

Employment

How many hours a week do you work for pay?

Responses coded as: 0 = none; 1 = one or more

Relationship Status

What is your relationship status?

Responses coded as: 0 = not in a relationship; 1 = in a relationship

Sexual Orientation

What is your sexual orientation?

Responses coded as: 0 = heterosexual; 1 = non-heterosexual

Received Crime Prevention Information

Have you received information on the following topics from your college or university?

Injury Prevention
Sexual Assault/Relationship Violence Prevention
Violence Prevention

Responses coded as: 0 = no; 1 = yes

<u>Demographic Variables:</u>

Sex

What is your gender?

Responses coded as: 0 = female; 1 = male

Age

How old are you?

Responses coded as: 18-24

Race

How would you usually describe yourself?

Responses coded as: 0 = nonwhite; 1 = white

Enrollment Status

What is your enrollment status?

Responses coded as: 0 = full-time; 1 = part-time

Grade Point Average (GPA)

What is your approximate cumulative grade average?

Responses coded as: 0 = above average (reference group); 1 = C or below average; 2 = No GPA

Appendix D

Binary Logistic Regression Models for Sexual Assault Victimization (N = 19,366)

	Model 1	Model 2	Model 3
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Disability and Sex			
Disability	1.711* (1.504,1.948)		
Disability*Sex	0.908 (0.627,1.315)		
Physical Disability		1.469* (1.144,1.888)	
Mental Disability		1.995* (1.665,2.391)	
Learning Disability		1.159 (0.967,1.387)	
Physical *Sex		1.342 (0.805,2.239)	
Mental *Sex		0.601 (0.300,1.207)	
Learning *Sex		1.214 (0.789,1.867)	
One Type of Disability			1.648* (1.440,1.885)
Two or More Types of Disability			2.118* (1.545,2.905)
One Type*Sex			0.847 (0.545,1.318)
Two or More Types*Sex			1.257 (0.617,2.560)
Sex	0.284* (0.239,0.337)	0.281* (0.234,0.336)	0.284* (0.239,0.338)

Demographic Characteristics			
Race	0.704* (0.633,0.782)	0.703* (0.633,0.782)	0.704* (0.634,0.783)
Age	0.900* (0.867,0.934)	0.899* (0.867,0.933)	0.899* (0.867,0.933)
Enrollment Status	0.688* (0.491,0.963)	0.686* (0.489,0.962)	0.684* (0.488,0.958)
C or Below Average	1.204 (0.994,1.459)	1.208 (0.995,1.466)	1.199 (0.988,1.455)
No GPA	0.884 (0.666,1.172)	0.888 (0.674,1.170)	0.884 (0.667,1.172)
University Type	0.835 (0.694,1.004)	0.830* (0.693,0.995)	0.836 (0.694,1.007)
Exposure			
Alcohol Use	1.553* (1.315,1.835)	1.550* (1.316,1.824)	1.552* (1.314,1.833)
Binge Drinking	1.323* (1.182,1.482)	1.331* (1.191,1.488)	1.325* (1.184,1.483)
Marijuana Use	1.382* (1.236,1.545)	1.378* (1.231,1.543)	1.378* (1.232,1.542)
Serious Drug Use	1.752* (1.178,2.607)	1.700* (1.165,2.480)	1.727* (1.167,2.555)
Number of Sex Partners	1.122* (1.070,1.176)	1.122* (1.070,1.176)	1.122* (1.070,1.177)
Fraternity/Sorority Membership	1.162 (0.948,1.425)	1.167 (0.954,1.429)	1.160 (0.946,1.424)
Athletic Participation	1.098 (0.983,1.226)	1.104 (0.989,1.232)	1.100 (0.985,1.228)
Volunteering	1.229* (1.079,1.401)	1.232* (1.081,1.403)	1.229* (1.078,1.401)
Proximity			
Off-Campus Housing	0.840* (0.733,0.963)	0.842* (0.734,0.965)	0.841* (0.734,0.964)

Lives with Parents/Guardians	0.829 (0.675,1.018)	0.832 (0.677,1.022)	0.831 (0.677,1.020)
Employment	1.182* (1.081,1.292)	1.184* (1.082,1.295)	1.185* (1.084,1.296)
Target Attractiveness			
Sexual Orientation	1.253 (0.974,1.611)	1.232 (0.948,1.601)	1.248 (0.968,1.608)
Relationship Status	0.767* (0.680,0.864)	0.764* (0.677,0.863)	0.767* (0.680,0.865)
Guardianship			
Received Crime Prevention Information	1.026 (0.928,1.133)	1.019 (0.921,1.127)	1.026 (0.929,1.133)
Mode of Survey Administration	0.944 (0.766,1.164)	0.928 (0.754,1.143)	0.941 (0.764,1.159)
Pseudo R^2	0.084	0.086	0.085
-2 Log Likelihood	-5141.8	-5132.7	-5139.3
χ^2	2305.2*	2708.8*	2353.7*

* $p < 0.05$

Appendix E:

Binary Logistic Regression Models for Sexual Touch Without Consent Victimization (N = 19,335)

	Model 1	Model 2	Model 3
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Disability and Sex			
Disability	1.738* (1.488,2.030)		
Disability*Sex	0.823 (0.568,1.191)		
Physical Disability		1.523* (1.163,1.994)	
Mental Disability		2.105* (1.756,2.525)	
Learning Disability		1.119 (0.901,1.390)	
Physical *Sex		1.219 (0.735,2.021)	
Mental *Sex		0.517 (0.249,1.075)	
Learning *Sex		1.173 (0.729,1.885)	
One Type of Disability			1.655* (1.411,1.940)
Two or More Types of Disability			2.280* (1.672,3.109)
One Type*Sex			0.798 (0.526,1.212)
Two or More Types*Sex			0.961 (0.453,2.037)
Sex	0.315* (0.265,0.374)	0.313* (0.261,0.374)	0.315* (0.265,0.375)

Demographic Characteristics			
Race	0.707* (0.630,0.794)	0.706* (0.629,0.791)	0.707* (0.629,0.795)
Age	0.906* (0.867,0.946)	0.905* (0.867,0.945)	0.905* (0.867,0.945)
Enrollment Status	0.583* (0.409,0.831)	0.580* (0.407,0.826)	0.578* (0.405,0.825)
C or Below Average	1.235* (1.026,1.488)	1.239* (1.027,1.495)	1.227* (1.017,1.481)
No GPA	0.946 (0.727,1.232)	0.952 (0.736,1.232)	0.947 (0.728,1.232)
University Type	0.833* (0.706,0.984)	0.827* (0.704,0.972)	0.835* (0.707,0.987)
Exposure			
Alcohol Use	1.536* (1.302,1.811)	1.533* (1.303,1.803)	1.535* (1.302,1.811)
Binge Drinking	1.316* (1.171,1.479)	1.326* (1.182,1.487)	1.318* (1.174,1.481)
Marijuana Use	1.391* (1.227,1.576)	1.385* (1.220,1.573)	1.386* (1.223,1.572)
Serious Drug Use	1.783* (1.203,2.641)	1.729* (1.196,2.499)	1.758* (1.196,2.583)
Number of Sex Partners	1.111* (1.063,1.160)	1.110* (1.063,1.160)	1.111* (1.063,1.161)
Fraternity/Sorority Membership	1.134 (0.917,1.402)	1.139 (0.923,1.405)	1.131 (0.915,1.398)
Athletic Participation	1.093 (0.983,1.215)	1.099 (0.988,1.223)	1.096 (0.986,1.218)
Volunteering	1.273* (1.110,1.459)	1.275* (1.113,1.460)	1.273* (1.110,1.460)
Proximity			
Off-Campus Housing	0.787* (0.696,0.890)	0.788* (0.696,0.892)	0.787* (0.696,0.891)

Lives with Parents/Guardians	0.817 (0.663,1.006)	0.821 (0.666,1.012)	0.819 (0.665,1.008)
Employment	1.209* (1.094,1.336)	1.212* (1.095,1.341)	1.214* (1.098,1.342)
Target Attractiveness			
Sexual Orientation	1.353* (1.062,1.723)	1.325* (1.030,1.704)	1.346* (1.054,1.719)
Relationship Status	0.787* (0.694,0.893)	0.784* (0.689,0.891)	0.787* (0.693,0.893)
Guardianship			
Received Crime Prevention Information	1.025 (0.933,1.125)	1.017 (0.925,1.119)	1.025 (0.933,1.125)
Mode of Survey Administration	0.921 (0.784,1.081)	0.903 (0.769,1.061)	0.918 (0.781,1.078)
Pseudo R^2	0.080	0.082	0.080
-2 Log Likelihood	-4797.9	-4786.7	-4795.5
χ^2	2005.3*	2286.3*	2242.5*

* $p < 0.05$

Appendix F

Binary Logistic Regression Models for Rape Victimization (N = 19,364)

	Model 1	Model 2	Model 3
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Disability and Sex			
Disability	1.895* (1.600,2.245)		
Disability*Sex	1.588 (0.739,3.413)		
Physical Disability		1.753* (1.282,2.398)	
Mental Disability		2.101* (1.706,2.588)	
Learning Disability		1.122 (0.836,1.506)	
Physical *Sex		0.697 (0.238,2.046)	
Mental *Sex		1.757 (0.741,4.167)	
Learning *Sex		1.851 (0.845,4.052)	
One Type of Disability			1.866* (1.583,2.200)
Two or More Types of Disability			2.061* (1.265,3.359)
One Type*Sex			1.385 (0.564,3.400)
Two or More Types*Sex			2.935 (0.900,9.577)
Sex	0.117* (0.078,0.177)	0.120* (0.084,0.171)	0.117* (0.0777,0.176)

Demographic Characteristics			
Race	0.760* (0.600,0.962)	0.760* (0.600,0.964)	0.760* (0.600,0.963)
Age	0.894* (0.832,0.961)	0.894* (0.833,0.959)	0.893* (0.831,0.960)
Enrollment Status	0.795 (0.485,1.303)	0.791 (0.482,1.298)	0.794 (0.483,1.303)
C or Below Average	1.338 (0.967,1.851)	1.350 (0.965,1.887)	1.335 (0.962,1.854)
No GPA	0.797 (0.468,1.357)	0.803 (0.478,1.350)	0.797 (0.468,1.356)
University Type	0.791 (0.489,1.277)	0.781 (0.482,1.267)	0.791 (0.489,1.281)
Exposure			
Alcohol Use	1.454* (1.188,1.780)	1.451* (1.188,1.773)	1.452* (1.187,1.776)
Binge Drinking	1.401* (1.179,1.664)	1.410* (1.190,1.672)	1.402* (1.180,1.665)
Marijuana Use	1.323* (1.163,1.504)	1.323* (1.165,1.503)	1.320* (1.164,1.498)
Serious Drug Use	1.818* (1.188,2.783)	1.787* (1.183,2.701)	1.804* (1.182,2.755)
Number of Sex Partners	1.099* (1.049,1.150)	1.098* (1.049,1.150)	1.099* (1.049,1.152)
Fraternity/Sorority Membership	1.539* (1.135,2.087)	1.550* (1.140,2.107)	1.539* (1.132,2.091)
Athletic Participation	1.028 (0.870,1.215)	1.040 (0.881,1.228)	1.030 (0.871,1.217)
Volunteering	1.158 (0.948,1.416)	1.164 (0.952,1.423)	1.158 (0.948,1.416)
Proximity			
Off-Campus Housing	1.028 (0.838,1.262)	1.031 (0.837,1.269)	1.029 (0.838,1.264)

Lives with Parents/Guardians	0.689* (0.491,0.966)	0.693* (0.493,0.972)	0.689* (0.492,0.964)
Employment	0.968 (0.829,1.130)	0.974 (0.835,1.136)	0.970 (0.831,1.133)
Target Attractiveness			
Sexual Orientation	1.081 (0.729,1.602)	1.051 (0.698,1.582)	1.079 (0.727,1.603)
Relationship Status	0.833 (0.689,1.008)	0.830 (0.688,1.003)	0.834 (0.689,1.008)
Guardianship			
Received Crime Prevention Information	1.178 (0.960,1.446)	1.168 (0.950,1.435)	1.178 (0.961,1.444)
Mode of Survey Administration	1.029 (0.639,1.655)	1.004 (0.627,1.607)	1.027 (0.638,1.651)
Pseudo R^2	0.097	0.099	0.098
-2 Log Likelihood	-2442.5	-2438.4	-2441.5
χ^2	876.4*	991.0*	1181.1*

* $p < 0.05$

Appendix G

Binary Logistic Regression Models for Stalking Victimization (N = 19,309)

	Model 1	Model 2	Model 3
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Disability and Sex			
Disability	1.579* (1.358,1.836)		
Disability*Sex	1.064 (0.753,1.503)		
Physical Disability		1.078 (0.751,1.547)	
Mental Disability		1.755* (1.348,2.284)	
Learning Disability		1.321* (1.037,1.683)	
Physical *Sex		2.186* (1.261,3.791)	
Mental *Sex		1.225 (0.752,1.995)	
Learning *Sex		0.808 (0.498,1.311)	
One Type of Disability			1.524* (1.307,1.778)
Two or More Types of Disability			1.925* (1.326,2.795)
One Type*Sex			0.921 (0.641,1.322)
Two or More Types*Sex			1.917* (1.004,3.658)
Sex	0.438* (0.367,0.522)	0.430* (0.361,0.513)	0.438* (0.367,0.522)

Demographic Characteristics			
Race	0.808* (0.702,0.929)	0.805* (0.701,0.923)	0.809* (0.705,0.929)
Age	0.926* (0.890,0.963)	0.923* (0.887,0.960)	0.924* (0.888,0.961)
Enrollment Status	0.986 (0.758,1.283)	0.986 (0.758,1.282)	0.983 (0.756,1.278)
C or Below Average	1.371* (1.196,1.572)	1.370* (1.193,1.573)	1.367* (1.191,1.567)
No GPA	0.899 (0.694,1.165)	0.905 (0.700,1.169)	0.901 (0.696,1.167)
University Type	0.919 (0.773,1.091)	0.913 (0.767,1.087)	0.920 (0.775,1.092)
Exposure			
Alcohol Use	1.102 (0.969,1.254)	1.097 (0.963,1.249)	1.101 (0.967,1.253)
Binge Drinking	1.202 (0.993,1.454)	1.209 (0.998,1.464)	1.203 (0.994,1.456)
Marijuana Use	1.230* (1.054,1.436)	1.227* (1.051,1.433)	1.228* (1.051,1.435)
Serious Drug Use	1.992* (1.379,2.877)	1.899* (1.349,2.672)	1.958* (1.361,2.818)
Number of Sex Partners	1.063* (1.037,1.089)	1.063* (1.038,1.089)	1.064* (1.038,1.090)
Fraternity/Sorority Membership	1.043 (0.855,1.272)	1.049 (0.861,1.278)	1.042 (0.854,1.271)
Athletic Participation	1.083 (0.964,1.216)	1.090 (0.971,1.223)	1.085 (0.965,1.220)
Volunteering	1.320* (1.176,1.481)	1.322* (1.177,1.484)	1.319* (1.176,1.481)
Proximity			
Off-Campus Housing	0.970 (0.815,1.154)	0.975 (0.819,1.162)	0.971 (0.815,1.157)

Lives with Parents/Guardians	1.231* (1.000,1.516)	1.237* (1.002,1.528)	1.236* (1.001,1.526)
Employment	1.157* (1.007,1.330)	1.162* (1.010,1.336)	1.162* (1.010,1.336)
Target Attractiveness			
Sexual Orientation	1.560* (1.184,2.054)	1.529* (1.156,2.023)	1.553* (1.179,2.044)
Relationship Status	0.951 (0.860,1.052)	0.952 (0.860,1.054)	0.951 (0.859,1.053)
Guardianship			
Received Crime Prevention Information	1.063 (0.913,1.237)	1.059 (0.909,1.234)	1.064 (0.913,1.239)
Mode of Survey Administration	0.982 (0.811,1.189)	0.972 (0.805,1.172)	0.978 (0.808,1.184)
Pseudo R^2	0.042	0.044	0.043
-2 Log Likelihood	-4860.4	-4849.7	-4855.3
χ^2	702.6*	765.5*	767.7*

* $p < 0.05$

Appendix H

Physical Assault Victimization

Original Survey Item (NCHA-II Question #5): *Within the last 12 months: Were you Physically Assaulted (do not include sexual assault)?*

	Scale	Mean	S.D.	Range
Physical Assault Victimization	(0 = No; 1= Yes)	0.045	0.207	0 - 1

Prevalence of Physical Assault Victimization Among Students with and without Disabilities

	N	%[1]	Z-Value
Full Sample	917	4.49	
Any Disability			
No	665	3.82[2]	2.74*
Yes	252	8.25	
Physical Disability	56	7.38	1.29
Mobility/Dexterity	5	6.25	0.28
Hearing	22	8.43	1.09
Visual	26	7.56	0.96
Speech/Language	9	7.26	0.58
Mental Disability	135	10.34	3.19*
Psychiatric Condition	75	9.68	2.34*
Bipolar Disorder	31	16.40	3.35*
Obsessive Compulsive Disorder	39	10.57	2.04*
Schizophrenia	2	16.67	0.94
Phobia	18	11.32	1.60
Other Mental	38	13.15	2.75*
Learning Disability	128	8.80	2.46*
ADHD	93	8.92	2.24*
Learning	57	8.23	1.60
Number of Types of Disability			
One	196	7.46	2.13*
Two or More	56	13.05	3.19*
Physical and Mental	7	13.21	1.27
Mental and Learning	28	11.11	1.90*
Learning and Physical	10	11.11	1.18
Physical, Mental, and Learning	11	32.35	4.63*

* $p < 0.05$

[1] Row percentages do not sum to 100% because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

[2] Students without a disability are the reference group for all Z-tests of proportions.

Binary Logistic Regression Models for Physical Assault Victimization (N = 19,355)

	Model 1	Model 2	Model 3
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Disability and Sex			
Disability	2.084* (1.655,2.624)		
Disability*Sex	0.872 (0.628,1.210)		
Physical Disability		1.545* (1.076,2.218)	
Mental Disability		2.530* (2.032,3.150)	
Learning Disability		1.358* (1.037,1.779)	
Physical *Sex		0.932 (0.534,1.629)	
Mental *Sex		0.922 (0.627,1.355)	
Learning *Sex		1.180 (0.724,1.925)	
One Type of Disability			1.910* (1.506,2.424)
Two or More Types of Disability			3.136* (2.111,4.657)
One Type*Sex			0.819 (0.582,1.152)
Two or More Types*Sex			1.173 (0.606,2.268)
Sex	1.386* (1.179,1.629)	1.368* (1.172,1.597)	1.386* (1.179,1.629)
Demographic Characteristics			
Race	0.753* (0.619,0.917)	0.746* (0.613,0.909)	0.755* (0.621,0.919)
Age	0.998 (0.945,1.053)	0.993 (0.941,1.047)	0.994 (0.942,1.050)
Enrollment Status	0.798 (0.499,1.277)	0.788 (0.495,1.254)	0.796 (0.498,1.274)
C or Below Average	1.574* (1.311,1.891)	1.568* (1.294,1.899)	1.562* (1.286,1.896)

No GPA	1.185 (0.872,1.609)	1.198 (0.879,1.633)	1.187 (0.875,1.610)
University Type	0.750* (0.636,0.883)	0.750* (0.640,0.878)	0.756* (0.642,0.891)
Exposure			
Alcohol Use	1.306* (1.085,1.572)	1.303* (1.085,1.566)	1.304* (1.085,1.569)
Binge Drinking	1.459* (1.264,1.683)	1.474* (1.278,1.699)	1.467* (1.272,1.692)
Marijuana Use	1.526* (1.310,1.778)	1.514* (1.302,1.761)	1.520* (1.305,1.771)
Serious Drug Use	1.758* (1.216,2.543)	1.686* (1.206,2.357)	1.721* (1.204,2.461)
Number of Sex Partners	1.052* (1.025,1.081)	1.052* (1.025,1.080)	1.053* (1.025,1.081)
Fraternity/Sorority Membership	1.151 (0.896,1.477)	1.156 (0.904,1.479)	1.148 (0.893,1.477)
Athletic Participation	1.087 (0.915,1.291)	1.102 (0.926,1.311)	1.092 (0.918,1.299)
Volunteering	1.063 (0.915,1.235)	1.066 (0.914,1.243)	1.063 (0.913,1.237)
Proximity			
Off-Campus Housing	1.147 (0.956,1.377)	1.153 (0.959,1.387)	1.149 (0.958,1.378)
Lives with Parents/Guardians	1.061 (0.856,1.315)	1.074 (0.866,1.333)	1.071 (0.860,1.334)
Employment	1.090 (0.955,1.243)	1.103 (0.963,1.264)	1.098 (0.961,1.254)
Target Attractiveness			
Sexual Orientation	1.278* (1.007,1.623)	1.215 (0.948,1.558)	1.268 (0.995,1.617)
Relationship Status	1.178* (1.008,1.377)	1.181* (1.011,1.380)	1.179* (1.010,1.378)
Guardianship			
Received Crime Prevention Information	1.223* (1.007,1.484)	1.212 (0.998,1.471)	1.221* (1.007,1.480)
Mode of Survey Administration	0.876 (0.679,1.130)	0.857 (0.666,1.104)	0.868 (0.673,1.119)
Pseudo R^2	0.062	0.066	0.064
-2 Log Likelihood	-3309.6	-3294.6	-3302.8
χ^2	809.1*	1244.6*	1246.0*

* $p < 0.05$

Appendix I

Verbal Threat Victimization

Original Survey Item (NCHA-II Question #5): *Within the last 12 months: Were you verbally threatened?*

	Scale	Mean	S.D.	Range
Verbal Threat Victimization	(0 = No; 1= Yes)	0.232	0.422	0 - 1

Prevalence of Verbal Threat Victimization Among Students with and without Disabilities

	N	%[1]	Z-Value
Full Sample	4,732	23.16	
Any Disability			
No	3,712	21.36[2]	7.98*
Yes	1,020	33.40	
Physical Disability	248	32.59	4.13*
Mobility/Dexterity	24	29.63	0.98
Hearing	93	35.50	3.27*
Visual	105	30.43	2.23*
Speech/Language	43	34.68	2.11*
Mental Disability	460	35.33	6.73*
Psychiatric Condition	278	35.92	5.62*
Bipolar Disorder	82	43.16	4.73*
Obsessive Compulsive Disorder	129	34.96	3.68*
Schizophrenia	4	33.33	0.58
Phobia	62	38.99	3.34*
Other Mental	116	40.42	4.88*
Learning Disability	507	34.82	6.76*
ADHD	381	36.49	6.71*
Learning	232	33.43	4.30*
Number of Types of Disability			
One	844	32.16	6.69*
Two or More	176	40.93	6.10*
Physical and Mental	23	43.40	2.57*
Mental and Learning	101	40.08	4.49*
Learning and Physical	33	36.67	2.13*
Physical, Mental, and Learning	19	54.29	3.48*

* $p < 0.05$

[1] Row percentages do not sum to 100% because disabilities and disability types are not mutually exclusive and respondents could report having more than one disability.

[2] Students without a disability are the reference group for all Z-tests of proportions.

Binary Logistic Regression Models for Verbal Threat Victimization (N = 19,345)

	Model 1	Model 2	Model 3
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Disability and Sex			
Disability	1.855* (1.648,2.090)		
Disability*Sex	0.806* (0.666,0.975)		
Physical Disability		1.547* (1.302,1.837)	
Mental Disability		1.912* (1.594,2.294)	
Learning Disability		1.421* (1.206,1.674)	
Physical *Sex		0.948 (0.658,1.367)	
Mental *Sex		0.751 (0.535,1.054)	
Learning *Sex		1.029 (0.791,1.338)	
One Type of Disability			1.791* (1.570,2.044)
Two or More Types of Disability			2.297* (1.770,2.981)
One Type*Sex			0.769* (0.627,0.942)
Two or More Types*Sex			1.084 (0.724,1.624)
Sex	2.033* (1.798,2.300)	2.006* (1.770,2.274)	2.034* (1.798,2.300)
Demographic Characteristics			
Race	0.962 (0.899,1.030)	0.962 (0.898,1.030)	0.963 (0.901,1.029)
Age	0.900* (0.867,0.933)	0.898* (0.866,0.931)	0.898* (0.866,0.931)
Enrollment Status	1.133 (0.942,1.362)	1.131 (0.941,1.359)	1.131 (0.942,1.359)
C or Below Average	1.343* (1.172,1.539)	1.341* (1.171,1.536)	1.340* (1.169,1.535)

No GPA	1.002 (0.857,1.171)	1.005 (0.863,1.170)	1.003 (0.859,1.170)
University Type	0.910 (0.790,1.048)	0.910 (0.789,1.050)	0.912 (0.791,1.051)
Exposure			
Alcohol Use	1.212* (1.070,1.374)	1.213* (1.071,1.374)	1.212* (1.070,1.374)
Binge Drinking	1.381* (1.245,1.532)	1.386* (1.250,1.537)	1.384* (1.247,1.535)
Marijuana Use	1.329* (1.205,1.466)	1.328* (1.202,1.467)	1.328* (1.203,1.467)
Serious Drug Use	2.122* (1.278,3.526)	2.050* (1.241,3.387)	2.080* (1.258,3.439)
Number of Sex Partners	1.109* (1.074,1.145)	1.109* (1.074,1.145)	1.109* (1.074,1.146)
Fraternity/Sorority Membership	1.077 (0.938,1.236)	1.076 (0.938,1.235)	1.075 (0.937,1.232)
Athletic Participation	1.040 (0.958,1.129)	1.043 (0.961,1.132)	1.041 (0.959,1.130)
Volunteering	1.118* (1.024,1.220)	1.119* (1.026,1.221)	1.117* (1.024,1.219)
Proximity			
Off-Campus Housing	1.056 (0.952,1.171)	1.057 (0.952,1.175)	1.057 (0.953,1.173)
Lives with Parents/Guardians	1.140* (1.001,1.298)	1.144* (1.005,1.302)	1.144* (1.005,1.303)
Employment	1.144* (1.062,1.232)	1.148* (1.066,1.236)	1.147* (1.065,1.235)
Target Attractiveness			
Sexual Orientation	1.268* (1.090,1.476)	1.254* (1.071,1.468)	1.262* (1.083,1.470)
Relationship Status	1.064 (0.983,1.151)	1.065 (0.984,1.152)	1.065 (0.984,1.152)
Guardianship			
Received Crime Prevention Information	1.064 (0.970,1.168)	1.061 (0.967,1.164)	1.064 (0.971,1.167)
Mode of Survey Administration	0.957 (0.818,1.119)	0.950 (0.813,1.110)	0.955 (0.818,1.114)
Pseudo R^2	0.066	0.067	0.067
-2 Log Likelihood	-9777.7	-9770.7	-9771.8
χ^2	2002.1*	2779.7*	2956.9*

* $p < 0.05$