

Original Article

Gender, crime victimization and fear of crime

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Abstract Crime and security on college campuses have received increasingly widespread attention in light of several recent, high-profile events. This study examines the relationship between victimization and fear of crime in a sample of college students, filling gaps in the literature by addressing key issues related to gender differences in fear. A sample of young adults was asked about prior victimization and fear of crime. Gender differences between men and women are examined in terms of relationships among four main types of personal victimization: stalking, sexual assault, family violence and intimate partner violence (IPV). Findings indicate that females are victimized more and are more fearful of crime than males. Race is also associated with fear in this sample. Furthermore, some types of crime victimization are significantly associated with fear of crime, although these associations differ from daytime to night. Implications are discussed in terms of gender, fear and crime victimization on campus.

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Introduction

Crime victimization is a major concern on college campuses. Several recent, high-profile events have thrust campus security issues into the forefront of media attention. For example, the recent shootings at Virginia Polytechnic Institute and State University in 2007 and Northern Illinois University in 2008 resulted in the death and injury of over 70 students and faculty. Although college campuses are generally assumed to be safe and relatively free from crime, research indicates college students report being fearful of crime (Fisher *et al.*, 1995). Although prior literature has concentrated on a number of factors associated with fear (such as collective efficacy and neighbourhood disorder), some of the extant literature focuses on the gendered relationship between crime victimization and fear. Overwhelmingly, research has found interesting gender differences among the general public as well as among college



students: men are more likely to be victimized by crime than are women, whereas women are more fearful of crime than men (Fisher, 1995; Warr, 2000; Jennings *et al.*, 2007). To better understand the influence of prior victimization on fear among college students, some research has examined the effects of personal vs property crime victimization (Dull and Wint, 1997). Although partitioning the data into categories provides valuable insight into the type of victimization (personal vs property) associated with fear, these two broad categories encompass a wide variety of crimes and may limit the interpretation and generalization of results. Given that women report being most fearful of crime, it is of particular interest to examine crimes that primarily affect women. This paper focuses on the associations between crime victimization and fear of crime among male and female college students. We hypothesize that crime victimization leads to a general fear of crime which, in turn, leads to concerns for safety while walking on campus.

The current study contributes to the literature on gender, crime victimization and fear of crime by examining the relationship between fear of crime and specific types of interpersonal victimization that college women are more likely to experience (including intimate partner violence (IPV), sexual assault and stalking). Furthermore, the current study examines two other types of interpersonal victimization, family violence and physical assault, and includes a measure of property crime victimization. Given the differences in prior research of fear of crime during the day and night, the current study examines the following research questions separately using a day–night fear measure. Guided by prior research, the current study addresses two research questions: (1) Are men more likely to be victims of crime whereas women are more likely to fear crime? and (2) Are victims of specific types of crimes more likely to fear crime? Because gender differences are a main focus of this study, the relationship between the specific types of interpersonal victimization and property crime and fear of crime will be examined separately across gender.

Prior Literature

Prior research on the public's fear of crime is a topic of increasing scholarly interest given that the majority of the literature on fear of crime has been developed largely during the past three decades (Ferraro, 1995). It is important to note that fear is often a healthy and normal response to thinking about, becoming exposed to, or being victimized by crime. However, fear of crime may also be unwarranted and overly exaggerated, producing high levels of stress and anxiety, which may lead to debilitating and constrained behaviour (Warr, 2000). Given the negative implications of fear of crime, research has begun to examine factors related to fear of crime. The following sections briefly summarize the literature on fear of crime and (1) crime victimization, (2) gender differences and (3) other demographic correlates.

Crime victimization and fear of crime

Generally, fear is a complex psychological process that impacts perceptions and behaviour in both direct (for example, taking steps to protect oneself) and indirect (for example, as a moderating or mediating factor in decision making) ways. Because fear is multi-dimensional, it

has been operationalized and measured in two primary ways with respect to the relationship between fear and victimization. Fear of crime researchers have distinguished between the impacts of direct and vicarious crime victimization. Although some individuals have not been victimized personally, they may have been exposed to others who have been victimized either through personal contacts (that is, friends, family members, acquaintances, co-workers, and so on) or through media outlets which regularly publicize crime victimization. The vicarious victimization model (also called the indirect victimization model), therefore, infers that individuals who have not been directly victimized may still be conscious of the potential for crime victimization. Although the vicarious victimization model has received some mixed support, much of the extant literature provides support for the vicarious victimization model, suggesting that fear of crime is linked to awareness of crime victimization (Skogan and Maxfield, 1981; Ferraro, 1996).

In addition to the vicarious victimization model, researchers have also examined the direct victimization model, which establishes a link between crime victimization and fear of crime (Skogan and Maxfield, 1981; Dull and Wint, 1997). Overwhelmingly, findings suggest that crime victims are significantly more likely to fear crime than non-victims. However, some research questions the relationship between fear and victimization (see Gibson *et al*, 2002). Methodological limitations may lead to possible explanations for the inability to link victimization with fear. For example, research demonstrating a weak or non-existent relationship between fear and victimization may be omitting important victimization types. As will be later discussed, prior research often fails to analyze specific types of victimization separately, which may result in overall non-significant findings.

In addition to examining a link between fear and victimization generally, prior research has also explored the relationship between fear of crime and categories of victimization. For example, Dull and Wint (1997) examined the relationship between victimization and fear of property and personal crime and found that victims of crime were significantly more likely to fear property crime victimization, whereas non-victims were significantly more likely to fear personal crime victimization. This finding suggests that not only is fear of crime associated with victimization, but also with crime type. Similarly, Skogan (1987) interviewed residents from selected neighbourhoods and found that victims of crime are more likely to fear crime than those who are not victimized. Furthermore, victimization by both personal and property crimes was associated with a heightened fear of crime, although the strongest relationship is between fear of crime and personal crime victimization (Skogan, 1987). Although prior research on fear of crime focuses on the general population, some researchers have examined the relationship between fear of crime and types of victimization among college students. Fisher *et al* (1995) surveyed 684 college students, staff, and faculty and found that those who had been victimized during the past year reported higher levels of fear; however, respondents who had *ever* been victimized did not report higher levels of fear than those who had not been victimized. This suggests that recent victimization is a more important predictor for fear than a distant victimization experience. Additionally, these authors found that heightened fear was associated with personal crime victimization whereas property crime victimization was not associated with increased fear.

Although partitioning victimization type into two categories (personal vs property) provides more instrumental information when assessing the relationship between fear and victimization, these two broad categories are still restrictive. Specifically, fear may operate differently across different types of crime categorized under one of the broad groupings



(personal vs property). Unfortunately, research to date has devoted little attention to the relationship between fear of crime and *specific types* of crime victimization. Of the limited research that focuses on specific types of crime victimization, most concentrate on crimes typically experienced by women, for example, sexual assault. The following section highlights this underdeveloped line of research and centres on the relationship among gender, crime victimization and fear of crime.

Gender, victimization and fear of crime

Considerable attention has focused on gender differences associated with fear of crime. Scholars have recognized a peculiar paradox regarding the relationship between victimization risk and fear of crime for men and women. Although males are more likely than females to be victims of crime, females are substantially more fearful of crime than males, both in the general population and among college students (Fisher, 1995; Warr, 2000; Gibson *et al*, 2002; Jennings *et al*, 2007). Nevertheless, college females are at high risk of victimization of many interpersonal crimes, such as IPV (Gover *et al*, 2008, forthcoming), sexual assault (Fisher *et al*, 2000) and stalking (McCreedy and Dennis, 1996; Nobles *et al*, forthcoming). Women experience higher rates of victimization than men for these particular crimes, with few exceptions, however the vast majority of prior research has aggregated crimes by broad types (that is, property and personal crime). Given that women experience a variety of personal crime victimization, it is especially imperative to disaggregate the effects on fear of IPV, sexual assault and stalking.

A growing body of research examines the relationship between fear of crime and sexual assault. More specifically, the impact of sexual assault on fear has been identified as an explanation of the fear-crime paradox in which women are victimized by crime less often than men but are more fearful. Ferraro (1996) coined the term 'shadow hypothesis' in an effort to describe the overshadowing effects of sexual assault on women's general fear of crime. Subsequently, researchers have pointed out that fear of sexual assault should not be limited solely to women, as men both indirectly and directly experience and fear sexual assault (Lane and Meeker, 2003). Although support has been found for the shadow hypothesis (Ferraro, 1996; Lane and Meeker, 2003), others have not successfully linked sexual assault and fear among women (Wilcox *et al*, 2007). Although the impact of sexual victimization has received some research attention, other forms of victimization are typically overlooked. Two notable exceptions to this include work by Barberet *et al* (2004) and Wilcox *et al* (2007), both of which examined the relationship between fear of crime and victimization by stalking, physical assault and sexual assault, among other types of specific crimes. Barberet *et al* (2004) concluded that female college students are more fearful than their male counterparts, particularly of physical violence, sexual assault and stalking by strangers. Similarly, Wilcox *et al* (2007) found a relationship between fear and stalking (when perpetrated by strangers) and physical assault (when perpetrated by an acquaintance) in their sample of female college students. Overall, it is clear that personal crime victimization generally is associated with fear of crime among the general population (Garofalo, 1979; Skogan and Maxfield, 1981) and college students (Fisher and Sloan, 2003). More specifically, the scant research examining specific types of personal crime indicate that different types of personal crime victimization operate in unique ways on fear of crime.

Demographic correlates of fear of crime

Given that demographic characteristics often influence risk (and type) of victimization, prior research examining the relationship between fear and victimization often include demographics either as statistical controls or as independent variables. In addition to gender, demographic variables often associated with victimization include age, race and ethnicity. With the exception of gender, much of the prior literature on demographic correlates of fear of crime focuses on non-college samples. The following briefly describes prior research findings on the association between fear and age, race, and ethnicity primarily among the general population. The majority of prior research suggests older individuals (especially the elderly) tend to be more fearful than the young (Ferraro, 1995; Gibson *et al*, 2002). Prior research on the racial differences in fear of crime indicates mixed findings. For example, some research suggests that Blacks are exposed to higher crime rates and, therefore, report being more fearful than Whites (Garofalo, 1979; Skogan and Maxfield, 1981); however, other research indicates few racial differences in reported fear of crime levels (Fisher *et al*, 1995; Chiricos *et al*, 1997). Prior research examining the effects of ethnicity on fear of crime often combines Hispanics together with racial minorities. One notable exception is work conducted by Parker *et al* (1993) who examine separately the effects of fear and victimization for both Hispanics and Blacks and reported that victimized Hispanics and Blacks are more likely to fear crime. Given the conflicting findings of the effect of race on fear and in light of the limited prior research on the role of ethnicity, it is clear that research should attempt to ascertain racial and ethnic differences in fear of crime. Although much of the prior literature on demographic correlates of fear of crime focuses on non-college samples (with the exception of gender), it is important to examine demographic differences in fear among college students.

Method

Procedures and sampling

The current study employs data from a web-based survey conducted in April and May 2007.¹ Survey items consisted of modified questions from previously validated scales and included questions regarding fear of crime (Fisher *et al*, 1995) and criminal victimization, including stalking (Tjaden and Thoennes, 1998), sexual assault (Fisher *et al*, 2000), IPV (Straus *et al*, 1996) and family violence (Straus *et al*, 1996). The population from which the sample was drawn included 48 237 college students aged 18 or older at a large southeastern university. A simple random sample of 10 000 individuals from the population received an electronic message (e-mail) inviting them to participate in the web-based survey. This sample size was selected in an effort to oversample individuals who were victims of low base-rate crimes and to provide appropriate statistical power for hypothesis testing. This strategy was successful in securing a diverse sample with adequate counts in each category, although one variable (assessing daytime fear of crime) was recoded to combine two categories to maintain model integrity (see footnote 4). Future studies may consider alternatives in sampling design or scale creation to ensure optimal efficiency in multiple regression analysis. In total, 1921 individuals participated, yielding a response rate of 19 per cent.² Couper (2000,



p. 484) explains that some web-based surveys obtain less than a 10 per cent response rate for 'single invitation surveys'. Given the paucity of information on weighting and replacement procedures for web-based samples (see Couper, 2000), no attempts have been made to adjust for non-responses. Despite the relatively low response rate of the current study, the composition of the sample of survey respondents resembles that of the overall university population. For example, the entire university population comprises 53 per cent females (compared to 61 per cent in the sample), and 65 per cent of the university population is White (compared to 78 per cent of the sample), 11 per cent Hispanic (compared to 10 per cent of the sample), 8 per cent Black (compared to 6 per cent of the sample), 7 per cent Asian (compared to 8 per cent of the sample) and the remaining 9 per cent represent other races (compared to 8 per cent of the sample).

Measures

Given that prior fear of crime research indicates some respondents express fear for the safety of others in addition to fear for personal safety, it was determined that enquiring about personal safety (rather than safety in general, including the safety of others) would yield a more conservative measure of fear of crime.³ The dependent variables in the current study mirror those used by Fisher *et al* (1995) and represent respondents' self-reported fear of crime while on campus, which was measured by asking respondents to rate their agreement, ranging from (1) strongly disagree to (4) strongly agree, of two items: 'I am reluctant to walk alone on campus during the day' and 'I am reluctant to walk alone on campus at night'. Respondents' fear during the day was measured and analyzed separately from their reported fear at night, as extant research on fear of crime suggests divergent causal processes depending on the time of day (Ferraro, 1995; Fisher *et al*, 1995). Finally, because of low counts in the daytime fear categories, the 'agree' and 'strongly agree' categories for the day fear model were recoded together to ensure model integrity.⁴

Four independent variables used in the current study represented scales derived from previously validated scales and included prior victimization of IPV, stalking, sexual assault and family violence. These four-scaled variables measure victimization over the lifetime. The scales measuring both IPV and family violence were comprised from a modified version of the Revised Conflict Tactics Scale (Straus *et al*, 1996) and included questions about physical, sexual and psychological abuse experienced by a romantic partner and a parent/guardian. The stalking scale was comprised from a modified version of the National Violence Against Women Survey (Tjaden and Thoennes, 1998) and included questions about physical, psychological and cyber-stalking. Given that stalking is a crime that occurs on a repetitive basis, respondents were classified as stalking victims if they had experienced one of the stalking items at least twice or if they had experienced at least two different stalking behaviours. The sexual assault scale was comprised from a modified version of Fisher *et al* (2000) items and included questions about 10 types of behaviour ranging from sexual coercion to rape. Responses were dichotomized for each of the four scales such that (1) indicated the individual had experienced a specific type of victimization and (0) indicated the individual had not experienced that specific type of victimization.

In addition to the four personal crime victimization scaled variables, respondents were asked to report their experience with property crime victimization by answering the

Table 1: Descriptive statistics

| <i>Variable</i> | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>Minimum</i> | <i>Maximum</i> |
|---|----------|-------------|-----------|----------------|----------------|
| Daytime campus fear | 1657 | 1.15 | 0.45 | 1 | 3 |
| Nighttime campus fear | 1659 | 2.54 | 1.06 | 1 | 4 |
| Stalking victimization | 1921 | 0.27 | 0.44 | 0 | 1 |
| Sexual assault victimization | 1550 | 0.32 | 0.47 | 0 | 1 |
| IPV victimization | 1458 | 0.18 | 0.38 | 0 | 1 |
| Family violence (physical) victimization | 1546 | 0.37 | 0.48 | 0 | 1 |
| Family violence (psychological) victimization | 1536 | 0.33 | 0.47 | 0 | 1 |
| Family violence (neglect) victimization | 1549 | 0.05 | 0.21 | 0 | 1 |
| Family violence (witnessing) victimization | 1552 | 0.12 | 0.32 | 0 | 1 |
| Vicarious victimization | 1654 | 0.57 | 0.50 | 0 | 1 |
| Property crime (theft) victimization | 1658 | 0.45 | 0.50 | 0 | 1 |
| Physical assault victimization | 1656 | 0.14 | 0.35 | 0 | 1 |
| Sex (0=female) | 1916 | 0.61 | 0.49 | 0 | 1 |
| Age | 1910 | 24.04 | 7.45 | 18 | 72 |
| Race (0=White) | 1909 | 0.22 | 0.41 | 0 | 1 |
| Ethnicity (0=non-Hispanic) | 1888 | 0.10 | 0.30 | 0 | 1 |
| Sexual orientation (0=heterosexual) | 1913 | 0.04 | 0.19 | 0 | 1 |

question: ‘Has anyone ever stolen anything from you?’ Respondents also provided information on whether anyone they know was a victim of property crime, physical assault, or sexual assault within the past 12 months. These three items were combined into a single scale for vicarious victimization. Whereas details of personal victimization may be highly salient and easily recalled, vicarious victimization experiences are likely to be less detail-oriented and subject to recency effects (Agnew, 1992).⁵ Response options for the property crime and vicarious victimization questions included (1) yes and (0) no. Additionally, the model includes control variables such as gender (female=0; male=1), age (a continuous variable), race (White=0; non-White=1), ethnicity (0=non-Hispanic, 1=Hispanic) and sexual orientation (0=heterosexual, 1=gay/lesbian/bisexual/other). Descriptive statistics may be found in Table 1.

Plan of analysis

The dependent variable in the analysis, fear of crime, was originally coded as an ordinal response item with four categories; therefore, ordinal logistic regression models were employed. However, a post-hoc diagnostic using the Brant test (1990) indicated that the parallel lines assumption of ordinal logistic regression procedures was violated ($\chi^2=29.36$, $DF=15$, $P<0.01$). As an alternative route to estimating the models with the implicit ordering of the dependent variables intact, we instead utilized an extension of the generalized linear model (GLM) for ordinal response variables (Williams, 2006).⁶ This procedure offers several advantages over simple recoding with binary logistic regression, including: (1) it preserves the multi-category coding scheme of the dependent variable; (2) like binary logistic regression generally, it estimates coefficients using the logit link function; and (3) most importantly, it permits some covariates to be constrained by the parallel lines assumption



whereas others are not, resulting in the most efficient and parsimonious model possible (Williams, 2006). Therefore, the procedure permits estimation of a partial proportional odds model, in which those factors meeting the parallel lines assumption (the 'constrained' factors) according to a more conservative standard whereas the coefficients for factors not meeting the parallel lines assumption (the 'unconstrained' factors) are compared across categories of the dependent variable.

Models for daytime and nighttime fear of crime were estimated separately, consistent with extant research suggesting different causal processes are dependent on the time of day. Interpretation of the coefficients for each regression model is straightforward. Coefficient values for the independent variables in the model that are not constrained by the ordinal logit assumption of parallel lines must be compared across different categories of the dependent variable. Thus, similar to results reported for multinomial logistic regression models, the coefficients here are tested against a reference category of the dependent variable; however, the intrinsic ordering of the dependent variable categories is maintained. Thus, the effects of unconstrained factors can be interpreted at various levels of the dependent variable to determine basic trends, such as whether a factor has a greater overall influence at higher levels of the dependent variable. Also, for the independent variables that remain constrained by the parallel lines assumption, the interpretation remains the same regardless of how the coefficients change for the non-constrained variables. Therefore, a comparison of these terms across categories of the dependent variable is unnecessary.

Results

The first research question addressed is: Are men more likely to be victims of crime whereas women are more likely to fear crime? Results indicate that 3.7 per cent of the overall sample reported being fearful during the day and 56.6 per cent reported being fearful at night, of which 32.8 and 13.5 per cent (respectively) were male. Thus, females reported being substantially more fearful during the day and night. Additionally, the counts for the victimization independent measures show that females report victimization at higher rates than males for *all* types of crime (see Table 2 for per cents of each crime type experienced).

Table 2: Per cent of victimization by crime type

| <i>Crime victimization type</i> | <i>Per cent of full sample</i> | <i>Per cent of males</i> | <i>Per cent of females</i> |
|---------------------------------|--------------------------------|--------------------------|----------------------------|
| Vicarious victimization | 57.19 (<i>n</i> =946) | 57.01 (<i>n</i> =358) | 57.27 (<i>n</i> =587) |
| Property crime (theft) | 44.69 (<i>n</i> =741) | 48.89 (<i>n</i> =308) | 42.16 (<i>n</i> =433) |
| Physical family violence | 36.61 (<i>n</i> =566) | 36.52 (<i>n</i> =210) | 36.70 (<i>n</i> =356) |
| Psychological family violence | 32.49 (<i>n</i> =499) | 28.07 (<i>n</i> =160) | 35.13 (<i>n</i> =339) |
| Sexual assault | 32.19 (<i>n</i> =499) | 12.03 (<i>n</i> =70) | 44.26 (<i>n</i> =428) |
| Stalking | 26.91 (<i>n</i> =517) | 16.13 (<i>n</i> =121) | 33.79 (<i>n</i> =394) |
| Intimate partner violence | 17.90 (<i>n</i> =261) | 12.10 (<i>n</i> =64) | 21.12 (<i>n</i> =196) |
| Physical assault | 14.19 (<i>n</i> =235) | 18.15 (<i>n</i> =114) | 11.78 (<i>n</i> =121) |
| Witnessing family violence | 11.47 (<i>n</i> =178) | 10.09 (<i>n</i> =58) | 12.30 (<i>n</i> =120) |
| Neglectful family violence | 4.58 (<i>n</i> =71) | 3.15 (<i>n</i> =18) | 5.43 (<i>n</i> =53) |

Overall, females are more likely to be victimized (by all types of crimes) and females are more likely to be fearful of crime (during the day and at night).

The second research question addressed is: Are victims of specific types of crimes more likely to fear crime? Results indicate a weak overall association between daytime and nighttime fear of crime ($r=0.265$). GLM ordinal regression models permit interpretation of coefficients for each of the independent variables of interest.⁷ For the daytime fear model, three independent variables were not constrained by the parallel lines assumption: prior family violence (neglect) victimization, prior theft victimization and gender. The theft victimization variable was negatively associated with daytime fear, although the relationship was only statistically significant for the 'disagree' category of the dependent variable in comparison to the reference category indicating that individuals who were not victims of theft were less likely to be fearful of crime. Also, gender was positively associated with the dependent variable, although the term was statistically significant only in the 'strongly disagree' category, indicating that females are more likely than males to be fearful of crime during the day. The family violence (neglect) victimization variable was non-significant across all categories of the dependent variable.

Two of the constrained independent variables had a significant association with campus daytime fear. Specifically, stalking victims were more likely to report daytime fear, whereas sexual assault victims were less likely to report daytime fear. Of the included control variables, only race showed a statistically significant relationship, with non-Whites more likely to self-report fear in the day. Results for the daytime fear of crime model are presented in Table 3 (Model 1).

For the nighttime fear model (Table 3 (Model 2)), two independent variables were not constrained by the parallel lines assumption: sexual assault victimization and gender. In the case of the former, there was a negative and significant association with the response 'strongly disagree'. The sexual assault victimization term was non-significant across other categories of the dependent variable, indicating that non-victims were highly polarized in their disagreement with the statement (specifically, non-victims were significantly more likely to be fearful). For gender, there was a positive and significant relationship to nighttime fear across all categories of the dependent variable, and the variance was only a matter of degree. Specifically, females were significantly more fearful of crime than males. The coefficient was largest in the 'strongly disagree' category, although there is evidence for a very strong and very consistent gender effect. Of the remaining independent and control variables, the only one demonstrating a significant association with campus fear was race, with non-Whites significantly more likely to self-report fear at night.

Results were further split by gender to assess the factors influencing daytime and nighttime fear for males and females (see Table 4). For the male daytime model, stalking victimization and psychological family violence were significantly associated with daytime fear for one response category, but the association was negative. Physical assault was positively and significantly associated with daytime fear for one category. Both race and ethnicity were positively and significantly associated with daytime fear in two different categories. The daytime female model indicates that stalking and sexual assault victimization are both significantly associated with daytime fear, but in opposite directions. Also, race was positively and significantly associated with daytime fear for females, as was family neglect in one response category. In sum, race and stalking victimization appear to be common themes related to daytime fear for both males and females, whereas factors such as ethnicity and



Table 3: Generalized ordered logit estimates for factors related to daytime and nighttime campus fear for the full sample

| | <i>Model 1: daytime fear (b (SE))</i> | <i>Model 2: nighttime fear (b (SE))</i> |
|--|---|---|
| <i>Constrained factors (all categories)</i> | | |
| Stalking victimization | 0.57 (0.21)** | 0.12 (0.13) |
| Sexual assault victimization | -0.63 (0.22)** | — |
| IPV victimization | 0.22 (0.24) | 0.01 (0.14) |
| Family violence (physical) victimization | -0.09 (0.21) | -0.03 (0.12) |
| Family violence (psychological) victimization | 0.16 (0.21) | 0.04 (0.12) |
| Family violence (neglect) victimization | — | -0.21 (0.27) |
| Family violence (witnessing) victimization | -0.09 (0.30) | 0.01 (0.18) |
| Vicarious victimization | 0.19 (0.20) | 0.10 (0.11) |
| Property crime (theft) victimization | — | -0.03 (0.11) |
| Physical assault victimization | 0.16 (0.27) | -0.01 (0.16) |
| Age | 0.02 (0.01) | 0.01 (0.01) |
| Race | 0.86 (0.21)** | 0.52 (0.14)** |
| Ethnicity | 0.09 (0.29) | 0.11 (0.18) |
| Sexual orientation | -0.08 (0.55) | 0.01 (0.30) |
| <i>Unconstrained factors: 'strongly disagree' category</i> | | |
| Sexual assault victimization | — | -0.49 (0.21)* |
| Family violence (neglect) victimization | -0.07 (0.44) | — |
| Property crime (theft) victimization | -0.05 (0.20) | — |
| Sex | 1.08 (0.24)** | 3.31 (0.21)** |
| Constant | -3.67 (0.41) | -0.33 (0.22) |
| <i>Unconstrained factors: 'disagree' category</i> | | |
| Sexual assault victimization | — | 0.15 (0.16) |
| Family violence (neglect) victimization | 1.16 (0.61) | — |
| Property crime (theft) victimization | -0.76 (0.34)* | — |
| Sex | 0.22 (0.31) | 2.71 (0.15)** |
| Constant | -3.97 (0.43) | -1.75 (0.24) |
| <i>Unconstrained factors: 'agree' category</i> | | |
| Sexual assault victimization | — | 0.27 (0.15) |
| Sex | — | 2.94 (0.32)** |
| Constant | — | -4.15 (0.37) |
| Wald χ^2 (DF), significant | 78.10 (18) | 499.40 (19) |
| | $P < 0.001$ | $P < 0.001$ |
| Pseudo R^2 | 0.07 | 0.17 |

Note: Reference category is 'agree/strongly agree' for Model 1, and 'strongly agree' for Model 2.

* $P < 0.05$; ** $P < 0.01$.

physical assault apparently affect males but not females. Other types of victimization, including sexual assault and family neglect, appear to affect females but not males.

The nighttime models were very similar across gender, with most independent variables non-significant in predicting nighttime fear. There were only two differences between males and females: (1) race was positively and significantly associated with nighttime fear for males but not females; and (2) sexual assault was negatively and significantly associated with

nighttime fear for males but not females. The remaining covariates were non-significant. In contrast to the gender-split daytime fear models, which exhibited gender differences according to patterns of victimization for males and females, nighttime fear appears to be a more generalized process that is unrelated in many instances to individual victimization history.

Discussion and Conclusions

The objectives of this study were to examine the factors associated with campus fear of crime and to identify gender differences between males and females, both in terms of general prevalence and in terms of covariates of fear. Two research questions were examined, the first of which investigated whether men are more likely to be victims of crime whereas women are more likely to fear crime. Findings indicate that women are more likely than men to be victims of all types of crime, including vicarious victimization, theft, sexual assault, stalking, IPV, physical assault and family violence (including physical and psychological abuse, neglect, and witnessing family violence). Although prior research indicates the opposite – that men are victimized more often than women (see Jennings *et al*, 2007) – the current study focused on interpersonal crimes that women tend to experience more often than men. Furthermore, gender is significantly associated with campus fear of crime in daytime and nighttime models. The relationships are consistently positive, indicating that females are consistently more likely to report being fearful while controlling for victimization history and a variety of other demographic factors.

The second research question examined the relationship between victimization of specific types of interpersonal crimes and fear of crime. The relationship between the specific types of interpersonal victimization and property crime and fear of crime were examined separately for both men and women. Overall, the results suggest several intriguing points. First, the comparison between the daytime and nighttime fear of crime models show that daytime and nighttime fear are associated with very different victimization history correlates. Daytime fear is associated with a host of crime victimization experiences, including stalking, sexual assault and theft, while controlling for various demographic factors. Comparatively, nighttime fear is associated with only one victimization variable (sexual assault) in one category, suggesting that daytime and nighttime fear may have very distinctive causal processes. Interestingly, victims of theft and stalking report being *more* fearful of crime whereas sexual assault victims report being *less* fearful of crime. Clearly, sexual assault victimization operates differently, and counter-intuitively, in comparison with other forms of victimization. Comparatively, stalking victims appear to report more persistent feelings of fear, which could be a function of coping mechanisms and other crisis-navigation resources, both formal and informal, available to sexual assault victims, whereas comparatively fewer are available to stalking victims. Race is consistently associated with fear of crime as well, and the relationship is positive, indicating that non-Whites are more likely to report being fearful of crime than Whites.

Although the current study has addressed gaps within the extant literature on fear of crime, it is important to consider some limitations and suggestions for future research. First, the current study measured fear of crime on campus generally, as other scholars have done (Fisher *et al*, 1995); however, some recent research argues the need for asking respondents about their fear of specific types of crime (Ferraro, 1995, 1996; Wilcox *et al*,



Table 4: Generalized ordered logit estimates for factors related to daytime and nighttime campus fear, broken down by gender

| | <i>Model 1: daytime fear (b (SE))</i> | | <i>Model 2: nighttime fear (b (SE))</i> | |
|--|---------------------------------------|----------------|---|---------------|
| | <i>Male</i> | <i>Female</i> | <i>Male</i> | <i>Female</i> |
| <i>Constrained factors (all categories)</i> | | | | |
| Stalking victimization | — | 0.63 (0.23)** | 0.11 (0.26) | 0.16 (0.15) |
| Sexual assault victimization | -0.68 (0.84) | -0.65 (0.24)** | — | 0.21 (0.14) |
| IPV victimization | 0.76 (0.69) | 0.18 (0.26) | -0.08 (0.29) | -0.00 (0.17) |
| Family violence (physical) victimization | -0.83 (0.57) | 0.06 (0.24) | -0.08 (0.21) | -0.01 (0.15) |
| Family violence (psychological) victimization | — | 0.14 (0.23) | 0.28 (0.21) | -0.06 (0.15) |
| Family violence (neglect) victimization | 0.95 (1.15) | — | 0.32 (0.51) | -0.46 (0.31) |
| Family violence (witnessing) victimization | 0.25 (0.73) | -0.19 (0.34) | -0.00 (0.32) | 0.06 (0.21) |
| Vicarious victimization | -0.15 (0.48) | 0.27 (0.22) | 0.24 (0.20) | 0.04 (0.14) |
| Property crime (theft) victimization | — | — | — | -0.00 (0.14) |
| Physical assault victimization | — | 0.14 (0.32) | -0.10 (0.25) | 0.17 (0.21) |
| Age | 0.04 (0.03) | 0.01 (0.01) | 0.01 (0.01) | 0.01 (0.01) |
| Race | — | 0.85 (0.24)** | 1.25 (0.23)** | 0.14 (0.17) |
| Ethnicity | — | -0.31 (0.35) | 0.26 (0.29) | 0.04 (0.22) |
| Sexual orientation | -0.15 (0.14) | 0.16 (0.56) | 0.74 (0.50) | -0.55 (0.38) |
| <i>Unconstrained factors: 'strongly disagree' category</i> | | | | |
| Stalking victimization | 0.38 (0.63) | — | — | — |
| Sexual assault victimization | — | — | -0.71 (0.26)* | — |
| Family violence (psychological) victimization | 0.71 (0.55) | — | — | — |
| Family violence (neglect) victimization | — | -0.13 (0.48) | — | — |
| Physical assault victimization | -0.09 (0.64) | — | — | — |
| Property crime (theft) victimization | 0.13 (0.53) | -0.05 (0.22) | 0.15 (0.21) | — |
| Race | 1.37 (0.50)** | — | — | — |
| Ethnicity | 0.61 (0.65) | — | — | — |
| Constant | -4.55 (0.88) | -2.57 (0.39) | -0.76 (0.37) | 2.80 (0.29) |
| <i>Unconstrained factors: 'disagree' category</i> | | | | |
| Stalking victimization | -4.15 (1.50)** | — | — | — |
| Sexual assault victimization | — | — | 0.25 (0.35) | — |
| Family violence (psychological) victimization | -4.18 (1.37)** | — | — | — |
| Family violence (neglect) victimization | — | 1.27 (0.74)* | — | — |
| Physical assault victimization | 4.64 (1.40)** | — | — | — |
| Property crime (theft) victimization | -3.03 (1.22)* | -1.15 (0.47) | -0.43 (0.25) | — |
| Race | -1.77 (1.18) | — | — | — |
| Ethnicity | 4.71 (1.30)** | — | — | — |
| Constant | -1.75 (1.24) | -3.63 (0.42) | -2.01 (0.39) | 1.10 (0.25) |
| <i>Unconstrained factors: 'agree' category</i> | | | | |
| Sexual assault victimization | — | — | 0.30 (0.83) | — |
| Property crime (theft) victimization | — | — | -0.57 (0.66) | — |
| Constant | — | — | -4.42 (0.54) | -1.01 (0.25) |
| Wald χ^2 (DF), significant | 29.00 (20) | 35.40 (16) | 57.90 (18) | 10.70 (14) |
| | $P < 0.09$ | $P < 0.01$ | $P < 0.001$ | $P < 0.71$ |
| Pseudo R^2 | 0.22 | 0.05 | 0.05 | 0.01 |

Note: Reference category is 'agree/strongly agree' for Model 1, and 'strongly agree' for Model 2.

* $P < 0.05$; ** $P < 0.01$.

2007). Therefore, future research may benefit by examining fear of specific types of crime (for example, IPV, sexual assault, stalking, and so on). Second, although the current study examined specific types of personal crimes (including stalking, sexual assault, family violence and IPV), the measure for property crime victimization is broad and includes all forms of property crime. As mentioned earlier, fear of crime has been traditionally associated with more personal and violent types of crimes and the nature and type of personal crimes tends to vary substantially more than property crime victimization. However, given that victims of property crime reported being more fearful of crime than non-victims, future research examining the relationship between fear and victimization by various types of property crime would contribute to the literature. Third, given the college environment, an examination of other features of students' lives may be especially helpful in teasing out the factors associated with campus fear (for example, night classes, residential location, and so on). Fourth, the response rate (19 per cent) is low. Although some other web-based surveys report similarly low response rates (Couper, 2000), it is important to note that this is a limitation of the current research. Finally, these findings and the following implications for security should be interpreted with caution given generalizability concerns. Certainly, future research could build upon the current study by addressing many of these issues, perhaps by employing qualitative methods.

Implications for Security

These findings have several important implications for security. First, the evidence in favour of significant and consistent effects of gender on fear of crime suggests that gender-specific approaches to prevention and/or reduction are important. Females are generally more fearful across circumstances, even when controlling for variation in victimization and key sociological measures (such as vicarious victimization). No doubt, preventing victimization is a critical undertaking for campus police agencies, especially given that crime victimization operates differently on fear of crime among women. Perhaps female sexual assault victims are less fearful on campus at night because they were victimized by acquaintances rather than by strangers. It is also possible that victims of stalking are more fearful on campus during the day because they experienced stalking during daylight hours. In addition to women being at higher risk for some types of victimization, fear may be a response that is determined by physiological and early developmental factors, including divergent gender-based socialization and normative expectations. This suggests two general possibilities: (1) women are physiologically more fearful across conditions, in which case fear cannot be mitigated in a comprehensive way by any set of policies or prevention efforts; or (2) women are socialized to be more fearful, regardless of experience, in which case efforts to educate the community on the prevalence and impact of crime in a way that promotes understanding rather than apprehension may be beneficial. Greater understanding of these processes may aid in developing interventions to address fear of crime on campus differentially for males and females, who apparently experience campus fear in different ways.

Second, these findings draw out an interesting subtext that demonstrates a potential relationship between fear of crime and race. One potential explanation for this is that fear of specific types of crime, particularly hate crimes, may be determined largely by subcultural factors in addition to sociological and/or individualistic ones. Although hate crime



victimization was not specifically measured in our survey, this type of crime may be much more salient to minorities than to Whites, in part because of the long history of anti-minority victimization in the United States. This influence should not be understated given the geographical context of the study (the South) and the composition of the student body from which the sample was drawn (more than 65 per cent White). This presents another implication for security: some individuals may be simultaneously fearful of crime and distrustful of the police. To the extent that police are viewed with mistrust or disdain (Alpert and Dunham, 1988), they may not be viewed as capable of adequately fulfilling the crime prevention role. Policies that emphasize community-building, even in the context of a college campus whose residents are highly transient in the span of as little as 3–5 years, may serve a dual purpose to promote the university's image and reduce aggregate levels of fear among minorities.

Third, it appears that, consistent with prior research on this topic, fear of crime is associated with very different covariates depending on the time of day. In the daytime, several factors related to individual-level victimization experiences were identified as significant predictors of fear whereas at night, these effects largely disappeared. Sloan *et al.*'s (1996) 2-year panel study of students, faculty and staff showed that a follow-up survey after several campus police safety improvements resulted in little change in fear or perceived risk of crime victimization. Therefore, a comprehensive approach to security must take into effect not only the logistical challenges in different contexts (for example, improving outside lighting requires capital expenditures, electricity, infrastructure, and so on), but also the psychological processes underlying individuals' responses. Fear may very well be more pervasive at night, but given the comparatively small number of covariates, it may be easier to target in narrowly focused interventions. Future research may be able to disentangle these effects by employing qualitative methods that focus on campus security, crime victimization and fear. Administrators and law enforcement personnel should continue to be sensitive to opinions and suggestions from students, faculty and staff, who may be leveraged as informal agents of social control in the campus context. Programmes such as 'Take Back the Night' and other student-organized, grassroots efforts offer multiple benefits from increased physical presence and surveillance on campus, enhanced partnership with campus agencies who may fund security-related activities and awareness campaigns, and greater overall collective efficacy for the campus community.

Overall, these findings present interesting challenges to policymakers, campus officials and law enforcement personnel. Campus security has perhaps never occupied a more visible place in public discourse given recent, high-profile tragedies. Traditional approaches to improving campus security, such as improving public disclosure about the nature and quantity of crimes on college campuses as in the Clery Act (see Fisher, 1995), posit that the public are safer when they are more aware of trends in victimization on campuses. Along these lines, our findings indicate that crime victimization is associated with fear on campus, both during the day and night. Therefore, addressing fear and victimization on campus may be of increasing interest to university administrators. Assessing where (on- or off-campus) and when (day or night) students experience different types of crime victimization, as well as examining students' fear of specific types of crimes, may be the first steps in addressing the dynamic relationship between victimization and fear among men and women on campus.

Notes

- 1 The school shooting at Virginia Polytechnic Institute and State University (Virginia Tech) on 16 April 2007 occurred during the time data were collected for the current research. It is difficult to determine the effect, if any, this incident had on the response rate or answers to survey questions. However, it should be noted that the incident may have increased the response rate and/or responses, particularly fear of crime, owing to the sudden magnitude of violent crime on college campuses. Similarly, the incident may have decreased the response rate and/or responses owing to the sensitive nature of the questions and the grief many college students may have been experiencing from the recent school shooting.
- 2 The authors conducted a second, independent web-based survey of the same length and with the same population in September 2007 and found a similar response rate.
- 3 It is important to note that other studies examining fear of crime have utilized a variety of measures, including general fear and fear of specific types of crime (for example, Wilcox *et al*, 2007).
- 4 The regressions estimated for the present study utilized a procedure in which negative predicted probabilities can occur, although this is not necessarily a critical flaw, nor does it necessarily cast doubt on the interpretation of the findings (Williams, 2006). The negative predicted probabilities are possible because the model is estimated without the constraint of parallel lines, meaning that some lines may converge in negative space (McCullagh and Nelder, 1989). Combining the 'agree' and 'strongly agree' categories for the daytime fear, dependent variable reduced the incidence of negative predicted probabilities by more than 94 per cent.
- 5 Although the final results presented herein use a combined scale for three types of vicarious victimization, the regression models were also estimated using each of the three types as separate independent variables. When the three vicarious victimization types were separated, none of the three terms achieved significance; thus, the substantive conclusions were identical no matter which method was utilized.
- 6 The procedure, called `gologit2`, is available as a downloadable ADO extension in Stata version 8 or higher. Models for the present study were estimated in Stata 10/MP.
- 7 A test for the equality of coefficients across models was not included in these results owing to the nature of the analysis. As models were estimated using the partial proportional odds approach, in which some independent variables were constrained by the parallel lines assumption whereas others were not, some independent terms in the models possess multiple coefficients (for example, one for each category of the dependent variable). The result is a 'many to one' comparison for several coefficients that is not readily interpretable.

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