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Crime prevention on college campuses: correlates of problem-solving, environmental design, and anti-fear efforts by campus law enforcement

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Abstract

The current study examines factors related to crime prevention activity by law enforcement agencies serving institutions of higher education throughout the USA. Identifying facilitators and barriers to the implementation of crime prevention programs and practices will be useful to proponents of these approaches. Using data collected by the Bureau of Justice Statistics from a large sample of agencies throughout the USA, we identify factors that are related to applied forms of crime prevention, including crime prevention through environmental design, problem-oriented policing, use of SARA, having a crime prevention unit within the agency, and participation in anti-fear campaigns. Particular attention is placed on the effects of campus characteristics, agency characteristics, campus crime, precautionary actions, and other law enforcement precautionary activities. Results suggest that, overall, more task-oriented agencies are also more likely to engage in crime prevention activity, although the determinants of crime prevention varied by activity.

Keywords Crime prevention · Environmental design · Problem-oriented policing

Introduction

Crime prevention has been an important part of the dialogue surrounding criminal justice policy for decades. Preventing crime not only reduces criminal victimization and its associated harms but doing so also decreases costs to the criminal justice system (Welsh et al. 2018). Because of its multifaceted benefits, police officers, security specialists, policymakers, researchers, and other practitioners recognize that crime prevention should be a focus of law enforcement and is a needed element of

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the criminal justice system. As a result, it has become increasingly common for law enforcement agencies to incorporate crime prevention strategies in many aspects of their daily operations.

Large-scale empirical research on the application and practice of crime prevention, however, has been rather sparse. While much has been written about the theoretical frameworks underlying crime prevention—notably crime prevention through environmental design, problem-solving, and the SARA model—little information is available on how commonly these crime prevention tactics are used in practice (e.g., Armitage and Monchuk 2011; Pascoe 1999; Teedon et al. 2010; Welsh et al. 2018). Still, a number of evaluations of specific and local crime prevention interventions have been published which suggest the utility of leading prevention strategies and theories (e.g., Iqbal and Ceccato 2016; Mawby 1977; Uchida et al. 2014; White and Katz 2013). Broadly speaking, these crime prevention strategies involve scientifically approaching the crime problem, identifying its underlying sources, and developing a situation-specific response grounded in opportunity reduction (e.g., Sherman et al. 2002; Welsh et al. 2018).

One locale in which crime prevention strategies, such as crime prevention through environmental design (CPTED), could be especially effective is the college or university campus. Campuses are limited spaces, with specific problems, serving particular populations, and researchers have investigated the unique dynamics of crime on college campuses (Reyns and Henson 2020). These unique dynamics make campuses ideal settings for applied crime prevention. It is an open question, however, to what extent or under what circumstances, campus law enforcement utilizes crime prevention strategies.

The present research addresses this issue by examining crime prevention activities undertaken by campus law enforcement agencies in the USA. Five dimensions of crime prevention activity—CPTED, problem solving, use of SARA, the presence of a crime prevention unit, and engagement in fear-reducing campaigns—are examined. Using data collected by the Bureau of Justice Statistics from agencies throughout the USA, we identify the factors that are related to these applied forms of crime prevention on the college campus. Particular attention is placed on the effects of campus characteristics, agency characteristics, campus crime, precautionary actions, and other law enforcement crime prevention activities.

Development of crime prevention

Crime is either a planned event, or it is an opportunistic activity. In either case, it does not simply occur randomly. If it did, everyone would have the same likelihood of being victimized at any time, which statistics show is not true (e.g., Morgan and Oudekerk 2019). Instead, crime is often the result of a combination of factors, such as individuals' lifestyles, associations, routine activities, and types and levels of guardianship, all of which create behavioral patterns (e.g., Brantingham and Brantingham 1993, 1995; Cohen and Felson 1979; Cohen et al. 1981; Hindelang et al. 1978). It is these patterned behaviors and actions that allow for a level of predictability with regard to crime. While it is not possible to pinpoint exactly where a

specific crime will occur, it can be determined, with some certainty, which areas will experience higher levels of crime and/or which individuals or products are more likely to be victimized (e.g., Clarke 1999; Eck et al. 2005, 2007). This predictability serves as the foundation for crime prevention.

At its core, crime prevention is the anticipation of criminal activity and the adoption of praxes designed to deter it and/or reduce the potential risks associated with it. The concepts and practices of crime prevention reach back to the early days of law enforcement with the frankpledge and watchman systems. Under those systems, citizen-officers took an oath to watch for, attempt to deter, and ultimately punish criminal activity. Over the course of the last few centuries, much of the exercise and theoretical underpinnings of crime prevention have evolved. As crime prevention has evolved, so has law enforcement's use of it. It is with the practices of crime prevention that many departments have progressed past strictly reactive tactics to incorporating more proactive approaches to dealing with crime. Today, crime prevention has become such a fundamental aspect of policing that preventative actions are engrained in the DNA of law enforcement.

Crime prevention as problem solving

One of the basic tenets of crime prevention is that the criminal event is a problem, and, like any problem, it can be fixed with proper understanding and response (e.g., Clarke and Eck 2005; Eck and Spelman 1987; Goldstein 1979; Sherman et al. 2002). Serving as the foundation of crime prevention, over the years, the problem-solving methodology has continued to progress. With the continual application of preventative tactics and approaches by law enforcement and policymakers, the field of crime prevention has undergone a considerable amount of transformation. Key to that transformation has been both the adoption and adaptation of theoretical concepts, as well as the continued growth of empirical evaluation and assessment.

Theoretical crime prevention

While a number of different theoretical frameworks and approaches have been utilized (e.g., developmental, community, situational), the most consistently examined and applied are those grounded in environmental criminology (Welsh et al. 2018). Environmental criminology is the study of criminal events with specific emphasis on the environment in which they occur, as well as how individuals interact within those environments (see Andresen 2014 for a review). Along with the victim and offender, the place is seen as another party directly involved in the process of crime. The structure, purpose, use, and behaviors of those within a place are all seen as key factors as to where, when, and how criminal acts occur. Though the term was not coined until the latter half of the twentieth century (Jeffery 1971), environmental criminology has been present in crime research and public policy for decades (see, e.g., Park et al. 1925; Shaw and McKay 1942; Sutherland 1934).

The impact of environmental factors has been included, at least at a prefatory level, in a diverse array of theories across the fields of criminology and criminal

justice, including broken windows theory, rational choice theory, and social disorganization theory, to name a few. For example, both the lifestyle-exposure theory developed by Hindelang and his colleagues (1978) and Cohen and Felson's (1979) routine activity theory place a premium on the impact that the physical environment, and how people interact within it, has on the likelihood of criminal activity. In addition, a number of criminology theories have been directly based largely on the environmental concepts, such as Brantingham and Brantingham's (1993, 1995) crime pattern/offender search theory, which focuses on how offenders and victims interact within shared environments. Still further, many of the concepts of environmental criminology have been fused with technological advances in studies of crime patterns, serving as the basis for techniques such as crime mapping (Eck et al. 2005).

One of the more frequently discussed and applied environmental criminology theories, with respect to crime prevention, is crime prevention through environmental design (CPTED). Coined by Jeffery (1971), CPTED represents a multifaceted theoretical approach which focuses on manipulating the physical environment in an effort to reduce crime. Early on, CPTED was largely theoretical. However, with Newman's (1972) application of the defensible space concept, and the empirical analyses performed by several others, CPTED began to evolve (Mawby 1977). CPTED is based on the idea that "the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life" (Crowe 2000, p. 46). Utilizing concepts such as natural surveillance, access control, and territoriality, the general belief was that crime, fear, and other analogous behaviors could be "designed out" through appropriate manipulation of the physical and social environments. For example, if residents of an apartment complex are encouraged to take ownership of common areas, they may be more likely to stop potential vandals—whether through formal (e.g., calling the police) or informal (e.g., alerting the vandal's parents) means (e.g., Newman 1996; Reynald and Elffers 2009).

While there has been much support for the defensible space and CPTED theoretical frameworks, there has also been a fair amount of criticism. Often, the approach is described as too vague and too poorly defined to be empirically tested (e.g., Hillier 1973; Mayhew 1979; Taylor et al. 1980; Merry 1981). Further, it was often noted that CPTED focuses only on the structure of the physical environment, with little regard for the psychological or ecological motives of crime (Mihinjac and Saville 2019). With the work of numerous researchers (e.g., Crowe 2000; Mihinjac and Saville 2019; Moffat 1982; Sampson and Groves 1989; Sampson et al. 1997), however, CPTED has progressed through multiple generations of evolution, currently in its third (Mihinjac and Saville 2019). In addition to the traditional concepts, such as target hardening, natural and mechanical surveillance, territoriality, and access control, the newest generation of CPTED also focuses on designing spaces in a manner to aid with physical, psychological, and environmental health (Fennelly and Perry 2018). The CPTED approach has also gained widespread acceptance due to both law enforcement efforts to embrace it and its role in the development of other crime prevention theories, such as situational crime prevention.

Applied crime prevention

In addition to theoretical development, crime prevention has progressed in terms of practical application (e.g., Andresen 2014). The core crime prevention concepts of understanding and planning have become fundamental in the problem-oriented approach now common among law enforcement. While the reactive tactics of policing are still present, they no longer dominate the law enforcement landscape as much as they once did (for examples, see POP Projects at www.popcenter.org). Evidence-based, problem-oriented, and community-oriented policing practices have become commonplace in law enforcement and security around the world. From the early days of the Kansas City Preventive Patrol Experiment (Kelling et al. 1974), to the Minneapolis Hot Spots Experiment (Sherman and Weisburd 1995), to the development of the Center for Problem-Oriented Policing (www.popcenter.org), experimentation, analysis, and reporting have become vital components of law enforcement.

The adoption of crime prevention tactics by law enforcement have led to a number of empirical methodologies, with varying degrees of success. One of the most widely utilized and favored among police seems to be the SARA model. Developed by Eck and Spelman (1987), the SARA model is a four-stage, problem-oriented approach to developing crime prevention strategies. Standing for Scanning, Analysis, Response, and Assessment, the SARA model is a decision-making guide intended to aid in understanding a problem (crime or otherwise), tailoring responses to those problems, and evaluating the effectiveness of those responses. With the approach grounded in crime prevention theory and developed through empirical analysis and evaluation, the SARA model has proven especially useful for dealing with issues involving crime, fear of crime, and the factors associated with each. Police departments around the world have found positive results from problem-oriented programs designed with the use of the SARA model (e.g., Braga et al. 1999; Uchida et al. 2014; White and Katz 2013).

While crime reduction is the primary concern for law enforcement agencies, an equally concerning analogous issue is fear of crime. The stress, anxiety, and fear associated with being a victim or potential victim of crime can have serious and long-term effects. The intensity of fear can be so strong, in fact, that the impact of fear, itself, can be just as serious as victimization. Fear can lead to changes in one's behavior, attitude, and emotional well-being (Box et al. 1988; Cobbina et al. 2008; Rader et al. 2007; Skogan and Maxfield 1981). As a result, both law enforcement and policymakers will often utilize crime prevention techniques to develop programs aimed at reducing individuals' fear and/or improving their quality of life (Bennett 1991; Cordner 1986). For example, many college campuses provide bystander intervention training for students (Banyard 2015; Coker et al. 2015; Franklin et al. 2017). Such training is designed to teach students how and when to intervene on others' behalf in instances where someone may experience physical harm or victimization. The goal is to not only help students gain confidence in their own abilities, but also to make them feel safer in their environment.

Evaluating the use of crime prevention tactics

As noted previously, crime prevention has developed much over the years, both theoretically and practically. It is now a frequently used approach among police departments around the world. However, although the use of crime prevention tactics is rather widespread, the evaluation of that use is much more individualistic. While there have been hundreds, if not thousands, of studies examining specific crime prevention theories, programs, and approaches (e.g., Crowe 2000; Mihinjac and Saville 2019; Moffat 1983; Sampson and Groves 1989; Shariati and Guerette 2019), to date, there have been few attempts to examine how widespread crime prevention actions are, or the characteristics of the communities that utilize them (for a rare example, see Hancock 2016). Undoubtedly, one of the main limitations to performing such research is the sheer volume and diversity of such programs. As a result, in order to perform such an analysis, it may be necessary to reduce the scope of the evaluation by focusing on communities that are both comparable and limited in diversity.

Crime prevention on college campuses

Numerous research studies have shown that victimization, especially sexual victimization, is common on college campuses. Students' lifestyles and routine activities, such as their drinking and drug use habits, are important determinants of their victimization (Dowdall 2012; Fisher et al. 1998). To address these issues, many colleges and universities have begun utilizing crime prevention strategies such as CPTED (Hancock 2016; Shariati and Guerette 2019). Campuses are often insolated environments, whose populations and governing bodies are both unique and specialized. These distinctive dynamics make college campuses ideal settings to utilize crime prevention strategies. However, while many colleges and universities have adopted crime prevention tactics, little is known which are most likely to do so.

Purpose of current study

The purpose of the current study is to examine crime prevention activities undertaken by college and university campus law enforcement agencies in the USA. Using data collected by the Bureau of Justice Statistics, we focus on the factors related to crime prevention strategies and tactics on the college campus. In doing so, the following research questions will be addressed:

(1) What are common crime prevention tactics and approaches taken on college campuses?
(2) What campus and law enforcement characteristics are most often associated with the adoption of crime prevention practices?
(3) Which campus and law enforcement characteristics serve as predictors of five types of crime prevention approaches—CPTED, problem solving, use of SARA, the presence of a crime prevention unit, and engagement in fear-reducing campaigns?

Methods

Data

Data for the present study were collected in the fall of 2004 by the US Department of Justice and the Bureau of Justice Statistics (BJS). BJS staff are governed by the ASA's ethical guidelines for statistical practice, from initial design through dissemination, which include ethical considerations for research subjects. Thus, data collection was guided by consideration for ethical treatment of participants.

All US law enforcement agencies at four-year institutions with 2500 or more students and agencies at two-year public colleges with 10,000 or more students in the fall of 2004 were surveyed. For-profit institutions and US military academies were not included in the sampling design. The majority of the surveys were completed online, and those not completed on the data collection website were submitted through mail or fax. These secondary survey data were obtained through the International Consortium for Political and Social Research website. Agencies with missing data on any of the variables of interest were excluded from the analyses, resulting in a final analytic sample of 556 campus law enforcement agencies.

Measures

Dependent variables

Five crime prevention measures were identified in the survey data to assess the determinants of crime prevention activities on college campuses. A survey item reading *"During the 2004–2005 school year, in which of the following activities did your agency engage?"* was used to operationalize three crime prevention activities. First, to measure crime prevention through environmental design (*CPTED*), agencies that indicated they had *"conducted environmental analysis (CPTED) to assess precursors to crime"* in response to the above question were identified as having engaged in CPTED. Second, agencies selecting *"included collaborative problem-solving projects in the evaluation criteria of patrol officers"* were categorized as engaging in problem-oriented policing strategies (*POP*). Third, those selecting *"actively encouraged officers to engage in SARA-type problem-solving projects on campus"* were identified as using *SARA*. Each of these are dichotomous variables (0 = No, 1 = Yes).

The remaining two crime prevention variables were operationalized from distinct survey items. To measure whether campus law enforcement had a crime prevention unit, agencies answered the following question: *"For each problem or task, indicate whether your agency has a special unit…"* Agencies with *crime prevention* units are those that specified they had full-time assigned personnel working a crime prevention unit (0 = No, 1 = Yes). Finally, whether campuses had an anti-fear campaign on campus was measured using the following survey item: *"In which of the following preparedness activities did your agency engage during the 2004-05 school year?"* *Anti-fear* campaign was coded dichotomously (0 = No, 1 = Yes). Descriptive statistics for the dependent variables are provided in Table 1.

Table 1 Descriptive statistics

Variable	Scale	Range	M (SD)
Dependent variables			
CPTED	0 = not present, 1 = present	0–1	0.32 (0.46)
Crime prevention unit	0 = not present, 1 = present	0–1	0.25 (0.43)
POP	0 = not present, 1 = present	0–1	0.18 (0.39)
SARA	0 = not present, 1 = present	0–1	0.33 (0.47)
Anti-fear campaign	0 = not present, 1 = present	0–1	0.21 (0.41)
Independent variables			
Public	0 = No, 1 = Yes	0–1	0.62 (0.48)
Buildings	Number of buildings	1–1180	88.90 (119.05)
Blocks	Number of city blocks	0–90	13.99 (17.79)
Part-time sworn	Number of officers	0–125	1.71 (7.90)
Full-time sworn	Number of officers	0–166	16.97 (18.94)
Marked cars	Number of cars	0–27	4.36 (4.03)
Thefts	Number of larceny/theft incidents	0–1327	169.17 (202.63)
Blue lights	Number of blue lights	0–512	50.99 (73.71)
Access control	Mean	0–1	0.63 (0.33)
Monitoring	Mean	0–1	0.73 (0.35)
Tasks	Sum	0–12	1.03 (2.02)
Partners	Sum	0–11	6.13 (2.69)
Preparedness	Sum	0–6	3.96 (1.63)

$N = 556$

Independent variables

Several independent variables were identified in the survey as possible determinants of crime prevention activity on college campuses, spanning four categories: campus characteristics, agency characteristics, crime and precautionary activities, and law enforcement activities. Descriptive statistics for these independent variables are provided in Table 1.

Campus characteristics Three variables representing campus characteristics are included in the analyses. First, whether the institution was a *public* college or university was considered as a determinant of crime prevention efforts (0 = Private, 1 = Public). Second, the number of *buildings* on the campus was included as a measure of the physical size of the campus. Third and finally, the number of campus city *blocks* was also included in the analyses as a measure of the physical size of the campus.[1] It should be noted that a number of other similar measures of campus characteristics (e.g., land area, miles of campus road) were available in the survey data, but none of these were significantly related to any of the dependent variables in preliminary analyses.

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[1] Missing values on this variable were replaced using mean substitution.

Agency characteristics Three variables representing campus law enforcement agency characteristics were likewise included in the analyses, which each represent some dimension of the size of the agency, and potentially its capacity for focusing on crime prevention. Agencies were asked to provide the number of sworn personnel with full general arrest powers working part-time and full-time. Therefore, the number of *part-time* and *full-time* sworn officers were included in the analyses. Similarly, as a measure of agency resources, the number of *marked cars* regularly used by the agency during the school year was also considered as a determinant of crime prevention effort.

Crime and precautionary actions Four variables were created from the survey data representing crime and precautionary actions that could be related to campus crime prevention philosophies. The first of these, *thefts*, is an indicator of the demand for crime prevention efforts on campus. This variable was developed from a survey item that asked the number of larceny/theft incidents on campus in 2004.[2] Secondly, the number of *blue light* emergency phones on campus is included in the analyses, which could indicate either demand for crime prevention activity on campus, or the degree to which campus law enforcement is progressive and forward thinking about crime. The *access control* variable is a combined mean score across three survey items indicating whether ($0=$No, $1=$Yes) the agency had primary responsibility for: access control, key control, and building lockup. Finally, the *monitoring* variable was similarly constructed and represents a mean score based on whether ($0=$No, $1=$Yes) the agency had primary responsibility for: surveillance camera monitoring or alarm monitoring.

Law enforcement activities Three variables were constructed representing varied law enforcement activities across the categories of: special tasks/units, partners, and preparedness. The *tasks* variable is a sum of how many specialized units with assigned full-time personnel the agency had to respond to specific problems, including: alcohol education, bias/hate crime, community policing, cybercrime, date rape prevention, drug education, general rape prevention, research and planning, self-defense training, stalking, student security patrol, and victim assistance. Likewise, the *partners* variable is a sum of how many groups the agency met with regularly during the school year to discuss crime-related problems, including: advocacy groups, business groups, domestic violence groups, faculty/staff organizations, fraternity/sorority groups, local public groups, other law enforcement agencies, neighborhood associations, religious groups, student housing groups, and student organizations. Lastly, *preparedness* represents a sum of how many preparedness activities the agency engaged in during the school year, including: a written plan to be followed in the event of a terrorist attack, dissemination of information to increase citizen preparedness, campus meetings on homeland security/preparedness, formal intelligence-sharing agreements with other law enforcement agencies, meetings with administrative-level campus staff regarding emergency preparedness plans, and

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[2] Ideally, a measure of violent crime would also be included in the analyses, but these data were not collected in the survey.

emergency preparedness exercises. The descriptive statistics for each of these law enforcement activity variables are provided in Table 1.

Analytic strategy

Given the dichotomous nature of the dependent variables under study, binary logistic regression is the appropriate statistical technique for identifying determinants of crime prevention activities. A binary logistic regression model was estimated for each of the five dependent variables. The results of these analyses are provided in Table 2. Prior to these analyses, checks for multicollinearity between the independent variables indicated that multicollinearity is not a statistical issue with the independent variables. Relationships are considered statistically significant at the 0.05 alpha level of significance.

Results

A binary logistic regression model was estimated for each dependent variable, resulting in the five models presented in Table 2. Model 1 of Table 2 indicates that only two variables were statistically significant and positive predictors of campus law enforcement agencies engaging in CPTED. Namely, the number of partnerships (OR = 1.21). and the number of preparedness activities (OR = 1.16) undertaken by agencies were associated with an increased likelihood of participating in CPTED activities. Model 2 suggests different determinants for agencies having a dedicated crime prevention unit on campus. Here, the numbers of city blocks occupied by the campus (OR = 1.01), the number of thefts (OR = 1.00), and the number of emergency blue lights (OR = 1.00) were each associated with an increased likelihood of having a crime prevention unit, although these variable effects were modest. Additionally, the number of problem-oriented tasks carried out by agencies (OR = 1.99) was related to an increased likelihood of having a crime prevention unit within the agency.

Model 3 provides regression results for problem-oriented policing on campus, specifically, whether collaboration in POP projects was used in the evaluation of officers. These results identify four variables as having positive and statistically significant relationships with POP. Findings show that agencies with more part-time (OR = 1.03) and full-time sworn officers (OR = 1.01) have a greater likelihood of utilizing POP collaborations in officers evaluations, which may suggest that agencies with more officers place greater importance on collaboration and have the resources to emphasize the importance of POP. Like the CPTED model, the number of partnerships (OR = 1.19) and the number of preparedness activities (OR = 1.36) were also associated with an increased likelihood that the agency would engage in POP.

Model 4 presents findings for the use of SARA on campuses. The results indicate that four variables impact the likelihood that campus agencies will use SARA in campus crime prevention. Interestingly, the number of marked cars on campus (OR = 0.92) was negatively related to the use of SARA, which may point toward

Table 2 Binary logistic regression results for crime prevention efforts

	Model 1 CPTED		Model 2 crime prevention unit		Model 3 POP		Model 4 SARA		Model 5 anti-fear campaign	
	B (SE)	OR	B (SE)	OR	B (SE)	OR	B (SE)	OR	B (SE)	OR
Public	0.13 (0.24)	1.14	0.03 (0.32)	1.03	0.07 (0.28)	1.07	0.33 (0.24)	1.40	0.26 (0.28)	1.30
Blocks	0.01 (0.00)	1.01	0.02* (0.01)	1.01	− 0.00 (0.01)	0.99	− 0.00 (0.00)	0.99	− 0.00 (0.01)	0.99
Part-time Sworn	− 0.00 (0.01)	0.98	− 0.01 (0.02)	0.98	0.03* (0.02)	1.03	0.00 (0.01)	1.00	0.01 (0.01)	1.01
Full-time Sworn	0.00 (0.00)	1.00	0.01 (0.01)	1.01	0.01* (0.01)	1.01	0.00 (0.00)	1.00	0.00 (0.00)	1.00
Marked cars	0.03 (0.03)	1.03	− 0.04 (0.04)	0.96	− 0.07 (0.04)	0.93	− 0.08* (0.03)	0.92	− 0.01 (0.04)	0.98
Thefts	0.00 (0.00)	1.00	0.00** (0.00)	1.00	− 0.00 (0.00)	0.99	0.00 (0.00)	1.00	0.00 (0.00)	1.00
Blue lights	0.00 (0.00)	1.00	0.00* (0.00)	1.00	0.00 (0.00)	1.00	0.00* (0.00)	1.00	− 0.00 (0.00)	0.99
Access control	− 0.40 (0.33)	0.66	− 0.42 (0.41)	0.65	0.48 (0.38)	1.62	− 0.55 (0.33)	0.57	− 0.06 (0.37)	0.94
Monitoring	0.24 (0.33)	1.27	0.15 (0.43)	1.17	0.07 (0.38)	1.07	0.31 (0.33)	1.37	− 0.29 (0.37)	0.74
Tasks	− 0.04 (0.05)	0.96	0.69*** (0.09)	1.99	0.00 (0.05)	1.00	− 0.00 (0.05)	0.99	− 0.06 (0.05)	0.93
Partners	0.19*** (0.04)	1.21	− 0.00 (0.05)	0.99	0.17*** (0.05)	1.19	0.11** (0.04)	1.12	0.24*** (0.05)	1.27
Preparedness	0.15* (0.07)	1.16	0.15 (0.10)	1.16	0.31** (0.09)	1.36	0.31*** (0.08)	1.37	0.28** (0.09)	1.33
− 2 log-likelihood	539.87		362.62		444.74		551.35		446.49	
Model $\square^2$	78.00***		201.23***		56.82***		82.91***		65.36***	
Nagelkerke R^2	0.20		0.49		0.17		0.21		0.19	

$N = 556$

the greater use of automobile patrols at the expense of problem solving as a strategy in campus law enforcement. In addition, the number of emergency blue lights (OR = 1.00) on campus was positively related to SARA, but the size of the effect was slight. Finally, as was observed in prior models, the numbers of partnerships (OR = 1.12) and preparedness activities (OR = 1.37) were significantly related to the use of SARA on campus. These two variables were also identified as significant determinants of the presence of anti-fear campaigns on campus in Model 5—the only two variables to influence the presence of these strategies—with partnerships (OR = 1.27) and preparedness activities (OR = 1.33) both moderately increasing the likelihood that these campaigns would be present on campus.

Discussion

Although crime prevention has been a major part of the discourse in criminology and criminal justice for decades, relatively little is known about the determinants of crime prevention action. Welsh and colleagues (2018, p. 141) argued that "it is not the outcome (the prevention of crime), but the approach taken that characterizes crime prevention." Thus, researchers have begun to investigate crime prevention, itself, as an outcome in empirical models (e.g., Madero-Hernandez et al. 2020; Reyns et al. 2016; Schreck et al. 2018). Among this research, a diversity of factors have been identified as influential in explaining preventative behavior or support for crime prevention. The current effort adds to this emergent area of scholarship by examining the factors that are related to law enforcement crime prevention activities at colleges and universities throughout the USA.

In the present study, crime prevention activity was defined as the use of CPTED, problem solving, SARA, the presence of a crime prevention unit, and engagement in fear-reducing campaigns. The results suggest that while crime prevention activities are common among law enforcement agencies serving US institutions of higher education, a strong majority of these agencies do not utilize any of these crime prevention tools. No more than one-third of agencies engaged in any crime prevention activity. The use of the SARA model was the most commonly employed crime prevention activity (33%), followed by CPTED (32%), presence of a crime prevention unit (25%), and participation in anti-fear campaigns (21%), with POP (18%) being used to a lesser degree. The primary purpose of the present study was to identify factors related to the use of these crime prevention tools across agencies serving institutions in the USA. On this point, at least three broad conclusions are warranted.

First, the most consistent determinants of crime prevention activity were other specific law enforcement activities. In particular, the number of partners that agencies worked with to resolve crime-related issues on campus, and the number of preparedness activities that agencies undertook throughout the school year were positively related to CPTED, POP, SARA, and anti-fear efforts. It may be that agencies that value these sorts of law enforcement practices are also more likely to see the merits in crime prevention activity. Perhaps these sorts of solutions also act as a gateway to deeper crime prevention initiatives. So too, these relationships are likely a reflection of the values held by leadership within the law enforcement agencies,

with more progressive administrators adopting law enforcement strategies that aid in crime prevention. Likewise, agencies that were identified as having more specialized units with full-time personnel (tasks) were also more likely to have a crime prevention unit. Interestingly though, for the most part, campus size was not a significant determinant of whether an agency engaged in crime prevention activity. The exception to this being the positive relationship between the number of city blocks the campus occupied and presence of a crime prevention unit.

Second, select crime and precautionary variables were significantly related to two crime prevention activities. That is, the number of thefts on campus was positively related to the presence of a crime prevention unit, although the strength of this relationship was weak. It is noteworthy that campus thefts were not significantly related to any other crime prevention activities. While speculative, this could be because campus thefts are a relatively straightforward or mundane crime that do not require specialized analysis or problem solving by law enforcement. Additionally, the number of blue lights on campus was positively related to the presence of a crime prevention unit on campus and the use of SARA by law enforcement personnel, although once again, the effects were quite modest. Perhaps the presence of blue lights on campus is an artifact of having a crime prevention unit within the agency.

Third, select agency characteristics were determinative of the use of POP and SARA. Specifically, agencies with higher numbers of part-time and full-time personnel were also those more likely to engage in POP. The explanation for this effect seems straightforward—agencies with more personnel have more resources to devote to crime prevention activity. It is perplexing, though, that these personnel resources were related to POP—the least common crime prevention activity undertaken by agencies. Nevertheless, this relationship was significant. Further, the number of marked cars available to agencies was negatively related to SARA. This may indicate a greater reliance on reactive law enforcement or resource priorities (e.g., automobile patrol) rather than a focus on more proactive preventative measures, such as SARA.

Equally notable to the significant relationships with crime prevention activity are those variables that failed to attain significance. Campus characteristics, largely, were not significant determinants of crime prevention activities. In the models, whether the institution was public (or otherwise) and the number of city blocks making up the campus were examined, and, with one exception (i.e., the relationship between blocks and having a crime prevention unit), were not related to crime prevention. Other campus variables were explored in preliminary models, such as campus density, and these also failed to produce any significant relationships. This suggests that other factors, including those measured in the current study, and perhaps some not included, are more important in understanding crime prevention activity. Concordantly, while blue lights were identified as having a weak, but significant, relationship with certain crime prevention activities, the other measured precautionary actions—access control and monitoring—were not significant in any model.

Limitations

Although the present research provides an important preliminary look at the use of crime prevention by a large number of law enforcement agencies throughout the USA, the study also has some potential limitations that should be considered along with the results. First, the data used to examine the correlates of crime prevention activities are becoming somewhat dated. These data were collected in 2004, and although there is no particular reason to suspect that the dynamics of crime prevention have changed significantly since that time, it would be ideal to examine these relationships with more contemporary data. Second, the data are cross-sectional. It is quite common in social science research to use cross-sectional data to establish relationships among variables, but it is not possible in the present study to establish temporal order between the variables. Thus, certain relationships are temporally unclear. For instance, it is possible that the number of partners is a result of using CPTED, rather than the other way around. Short of longitudinal data or measures that establish time order, this will remain a salient issue. Third, the dataset only provided information on one type of campus crime—theft. Though theft is certainly an issue on college campuses, there are a number of other crimes that also occur at high rates. For example, many campuses have issues with sexual misconduct. Unfortunately, the limitations of the current data preclude any examination of the possible relationships between such crime and crime prevention strategies. Finally, the data utilized in the present research were collected from law enforcement agencies serving institutions of higher education. We contend that this is a useful approach because of the commonalities shared across institutions (e.g., similar populations), but the results cannot be generalized to US law enforcement agencies generally.

Implications and conclusions

These limitations present opportunities for future research to improve upon the current study, but the results also suggest some implications for further research. First, researchers should continue to examine the use of crime prevention theory and practice as an outcome in empirical research. It is important to understand the determinants of crime prevention activity, along with its effectiveness. Doing so will provide mechanisms for encouraging its use as well as identifying barriers to its implementation. Further, by expanding such research into additional community types (beyond college and university settings), we get a clearer picture of the full scope of the effectiveness of crime prevention efforts.

Second, while the present study utilized data from US institutions of higher education, the results may provide some insights into crime prevention determinants in countries outside the USA, such as the Canada, for example. When comparing these countries, college—or university—is different in a number of ways (e.g., university size, living accommodations, costs). However, Canada tends to place a greater premium on crime prevention activities generally, and thus, research is needed to determine whether the facilitators and barriers in the present research also apply to the

Canadian university system and to institutions of higher education outside of the USA. In another example, universities in the UK, with few exceptions, do not have campus police forces, and so research examining the determinants of campus crime prevention by external agencies is needed.

Third, our descriptive findings suggest that crime prevention is not uncommon among agencies, but neither is it prolific. The finding that only one-third of campus agencies utilize any crime prevention methods is somewhat discouraging considering the demonstrated utility of these approaches from prior research (e.g., Braga et al. 1999; Cozens et al. 2005; Latessa and Travis 1987; Mazerolle et al. 1998). Again, this speaks to the importance of understanding barriers to crime prevention. From a practical standpoint, increasing the use of crime prevention strategies among colleges and universities could not only help to change the landscape of such communities, it could also help provide a better understanding of the role crime prevention plays in those types of environments.

Fourth, due to limitations with the current data, the present study was restricted to examining only the impact of and relationships with theft. Given that many crime prevention initiatives and programs on college campuses focus on violent crime, and especially sexual violence, inclusion of such crime types in future research could be particularly revealing, especially in regard to anti-fear campaigns and student-based programs, such as bystander intervention. As alluded to previously, the weak relationships between crime and crime prevention strategies found in this study may simply be an artifact of the nature of the programs. If the crime prevention initiatives are targeting theft, for example, their impact will be less obvious.

Finally, the present study is exploratory and relies on secondary data. It would be useful to collect primary data, grounded in organizational theory, to better understand the deeper reasons why crime prevention is only lightly used at US law enforcement agencies. In the end, though, the present research represents a further step toward better understanding the implementation of crime prevention programming as police reformers look toward a more proactive and prevention-oriented future for policing.

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