

Multistate Study of Convenience Store Robberies

Summary of Findings

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Homicide ranks as one of the leading types of occupational injury in the United States, accounting for over 1100 worker deaths in the most recent year. In the period 1980 - 1989, the rate of employee homicide was reported as 8,0 per 100,000 with 15 percent of these homicides resulting from gunshots. After taxicabs, convenience stores have the highest prevalence of workplace homicide (NIOSH, 1993) and also have very high rates of robbery. This has prompted leaders of the convenience store industry, public health officials, and criminal justice practitioners to search for ways to reduce these rates and enhance the safety of convenience store workers.¹

A variety of reasons make convenience stores prone to robbery, which is frequently associated with injuries that can result in death. These stores are easily accessible and are located in metropolitan areas. They have available cash on hand, which makes them attractive to robbers who need a quick source of funds. In addition, prior research has documented that certain convenience stores are more subject to robbery and subsequent injury than others, which is evidence that even within this high- risk category of business, some stores are more vulnerable than others (Amandus, et al., 1994). In Maryland, for example, 63 percent of all convenience store robberies occurred in three counties (Amandus, et al., 1994), which, suggests that certain convenience stores are targeted more frequently than others. This fact provides a basis for applying tested crime control strategies.² Unlike

¹For purposes of this paper, convenience store is defined as an establishment of 5000 square feet or less, operating with extended hours, and selling a variety of commodities including dairy products.

²See Sherman, L.W. (1992) "Attacking Crime: Police and Crime Control." In M. Tonry & N. Morris (Eds.), Modern Policing. Chicago: University of Chicago Press.

other high-risk occupations (for example, taxicab driver) convenience stores are static establishments which may enable certain crime control strategies employed by police, the stores,³ or through public ordinances⁴ to have a deterrent effect on robbery.

This paper describes a research project conducted in five states to provide more detailed information on convenience store robberies and to identify ways in which these robberies might be reduced.

Prior Literature

The previous studies on convenience store robberies have examined primarily the influence of environmental design characteristics and environmental design (CPTED) strategies (see Crow and Bull, 1975; White, 1986). Overall, the evidence is suggestive of a causal connection between some environmental influences and convenience store robbery. As a result of this research, some store chains (Crow and Bull, 1975) and municipalities (Clifton and Callahan, 1987) have instituted specific robbery prevention strategies. Specifically, having two or more clerks has received much research support (Swanson, 1986; White, 1986; Hunter, 1988; Calder and Bauer, 1992) and consequently raised the most debate from the convenience store industry (see Chambers, 1988). Good cash handling policies emphasizing limiting the amount of cash, posting signs, and using drop safes, have received mixed support from the literature (Crow and Bull, 1975; Swanson, 1986; Hunter,

The Southland Corporation now requires its stores to practice certain robbery prevention strategies and trains its employees in robbery prevention techniques.

The City of Gainesville, Florida, passed an ordinance in 1987 requiring convenience stores to change certain practices.

1988). Research has also shown limiting concealed access or escape can prevent convenience store robberies. For example, providing a sufficient amount of light both internally and externally, removing signs from windows, and placing cash handling in clear view of the outside seem to deter robberies (Crow and Bull, 1975; White, 1986; Hunter, 1988; La Vigne, 1991).

In contrast, the deterrent effects of security devices, such as alarms and video cameras, have received mixed support. Crow and Bull (1975) found that stores employing such measures were less likely to be robbed. These findings were supported by Swanson (1986) and Hunter (1988). Yet research conducted by Crow and Erickson (1984) specifically testing the effects of cameras did not find a significant difference in robbery between stores with cameras and those without. The location of the cash register has also received mixed results (Hunter, 1988; La Vigne, 1991; Calder and Bauer, 1992); however, the mixed findings could be due to a difference in experimental locations.

Whether a convenience store was located on a busy street, making the robber more likely to be detected, was found to have an influence on robbery by Duffala (1976), Hunter (1988), and Calder and Bauer (1992). Finally, employee training in robbery prevention techniques, such as keeping the store clean, staying alert, safety procedures during a robbery, have received support, suggesting a deterrent effect on robbery (Crow and Bull, 1975; Clifton and Callahan, 1987; Hunter, 1988; La Vigne, 1991) (See Table I).

TABLE I
RESEARCH FINDINGS ON EFFECT OF ENVIRONMENTAL FACTORS ON
PREVENTION OF CONVENIENCE STORE ROBBERY

Environmental Factor	Prevents Robbery	
	Yes	No
Two or more clerks	D, E, F, H	G
Good cash handling	D	A, F
Eliminate concealed access/escape	A, E, F, G	
Security devices in use	F, D	A, C
Placement of cash register	F.G.H	
Located on busy street	B.F.H	
Robbery prevention training	F, G	A

A. Crow and Bull, 1975; **B.** Duffala, 1976; **C.** Crow and Erickson, 1984; **D.** Swanson, 1986; **E.** White, 1986; **F.** Hunter, 1988; **G.** La Vigne, 1991; **H.** Calder and Bauer, 1992

Multistate Research on Convenience Store Robberies

Our review of literature resulted in the following observations that guided our research:

(1) Variation in the sample of convenience stores studied was an important factor. As one increases the diversity of the area studied (e.g., city to state), the findings became less consistent.

(2) Given the complexity of the factors thought to influence convenience store robberies (from five in Crown and Bull to 61 in recent studies) the importance of offender and victim perceptions needs more attention. We need to combine the early perceptual

approach with the **full** range of factors thought to be influencing this type of crime.

(3) Since these criminal events involve face-to-face interaction between the victim and offender, research should compare how these actors perceive these events.

(4) The issue of the effect of multiple clerks and robbery and injury remains a central issue for policy and theory.

(5) No attention has been given to the possibility that offenders may vary in their approach to convenience store robberies. Research has considered variation in stores, surroundings, and clerks but not in offenders. Given what we know from other research on offenders, this appears to be a significant omission from this body of research.

These observations guided the research described in the next section which is multistate and considers the perceptions of novice and repeat offenders as well as victims.

Methodology

The five states involved in this research effort had previously conducted research to estimate the probability of convenience store robberies in their jurisdictions and the extent of injury in those robberies. Those results identified areas in which convenience stores were at greater risk of robbery (Amandus, et al., 1994). In the present study it was decided that interviews with convenience store robbery victims and offenders would be used as the primary source of data to address the questions of injury and store characteristics that might influence the rate of robbery and injury. This required that procedures for identifying victims and offenders be similar across all five states. The primary source of information on offenders was currently incarcerated offenders. In each state this required the analysis of

currently incarcerated robbers to determine if the robbery that they had been convicted of was a convenience store robbery.⁵ A total of 148 offenders were interviewed, in interviews of 25 to 40 minutes.⁶

The identification of convenience store victims was more difficult. Using the data from our earlier study, which identified stores that had been victimized, we anticipated that these stores would be the location for victim interviews. While this occurred in a few instances, in others the turnover in store personnel or the refusal to allow access for interviews resulted in the need to explore other techniques to identify victims. The primary strategy used in each state was to select convenience stores in potentially high convenience store robbery areas, to approach those stores for permission, and when granted, to conduct interviews with the individuals working in the stores who had been victims of convenience store robberies in which injury may or may not have occurred.⁷ Once victims were identified, they were interviewed either in person or by phone depending on the distance to the store. There appear to be no differences in responses between phone and in-person interviews.⁸ A total of 80 victims were interviewed in interviews of 20-25 minutes.

Most states' automated data did not provide enough detail about sentencing offense. Therefore, assessment of base files in each state were necessary to identify those robbers who in fact had been convicted of a convenience store robbery.

⁶ As is noted in the results, in one state only one offender was able to be identified. This reflected the difficulty of reviewing base files and the inadequacy of offense classifications in this state. In the other four states up to 41 offenders were identified and were interviewed in each state for a total sample of 148 offenders interviewed.

Twenty such interviews were conducted in four of the five states participating in the study. In the fifth state, primarily for logistical reasons of distance and difficulty in gaining access to convenience stores, these interviews were not completed.

For data on this point please contact the author.

The primary focus of the offender and victim interviews was on the nature of the convenience store robberies in which they participated (injury, use of weapon, time of day, and how they behaved) and the factors they think prompted the robbery. We asked offenders how they planned the crime, what factors influenced the store selection, and what factors could have prevented them from robbing the store. The selection of these factors was based on the elements the literature suggests could influence offenders' decisions. In addition we asked offenders about their history of robbing convenience stores to distinguish between repeat and first-time offenders.

While the procedures for conducting interviews and asking questions were very comparable from site to site, the differences in identifying victims in this study raises questions about the propriety of aggregating across sites the victim interviews. We combine the victim interviews because the value of this information, even from a sample selected the way it was, outweighs the differences in sampling procedures for generating additional hypotheses and insights.⁹

Conducting multisite research is always difficult when different teams of researchers are involved. In this effort significant cooperation and work had gone into definitions of convenience stores so that there is strong comparability across sites on this basic element of design. Finding and gaining cooperation from victims proved to be more difficult than had been anticipated and, therefore, the claims that these victims were selected in comparable ways is open to serious question. We make no claims about being able to generalize all

Once data were collected in the individual sites, the interviews were forwarded to the central site where all coding and data entry were completed. This procedure assures comparability in coding, particularly those questions that are open-ended.

victims, but suggest an approach and that the results are useful for future research.

Results

Table 2 contains the frequencies and percentages for the responses of victims to the items included in the interviews.¹⁰ (See Appendix for Tables 2 through 9). The majority of victims (51.3%) had worked in convenience stores for two years or less. Only 28 percent had worked for more than four years. Approximately 50 percent had been victims of only one robbery whereas the remaining 50 percent had been victims in two or more robberies, with 14 percent of the respondents reporting they had been robbed five or more times. The victims reported that in the robberies in which they had been involved there had been injury in 28 percent of the cases, and of those injured, 37.5 percent described the injury as moderate or extensive. Of the 22 victims who described their injuries, trauma to the head was the most frequently reported (68.2%). These data reflect the fact that victims of convenience store robberies experience robberies frequently, and that injury occurs in about one-quarter of such cases.

Most robberies occurred in the early morning hours or late evening. About half of the respondents (47.2%) indicated that they used self protection during the robbery. This included activating the alarm (68%) and firing a weapon (24%). When individuals were asked what could be done to prevent the robbery they indicated changes in the store characteristics including better alarm systems and increasing police and security. The

The number of responses was different for each question. Questions for which there were few responses should be interpreted with caution.

respondents indicated a particularly fatalistic approach to what could be done to prevent injury; with 65% of those who had been injured indicating that nothing could have been done to prevent it. The majority of respondents indicated that they had not had training prior to the incident.

Table 3 provides basic descriptive information on the responses of the offenders to the interviews. (Offender characteristics are summarized in Appendix C.) The offenders reported that the crimes that they had committed were usually committed with others (53 % of the time) and that the most frequent number of other offenders that accompanied them in the commission the convenience store robbery was one (52%). The offenders indicated that 87 percent of the time they used a weapon in the commission of the robbery and that the most frequently used weapon was a gun. However, the offenders reported that for 71 percent of the cases the weapon was displayed only and was not used to attempt to injure the victim. The offenders report that in 14 percent of the convenience store robberies in which they were involved, injury occurred to one or more of the employees or customers in the store.

Forty percent of the offenders indicated that they had previously robbed convenience stores. They report that in their previous robberies 18 percent involved injury *to* a store clerk or bystander. The offenders reported that at the time of committing the convenience store robbery, for which they were currently incarcerated, they were either drinking, using drugs, or using some combination of these (83% of the cases). The offenders said that the single most important motivation for robbing the store was money, or money for drugs, but a wide variety of other motivations also prompted their involvement. These motivations included rudeness on the part of the staff, desire for the items in the store, and unspecified

reasons summarized usually as "I just wanted to do it." The offenders reported that the planning for the crime of convenience store robbery was fairly modest, having being conducted in a period of six hours or less in 64 percent of the cases, (73 percent did not consider robbing any other store). For those who did consider robbing another store and did not, the reason had to do with the fact that the store had a number of people around it, was in a location that they felt uncomfortable with, or they simply were not ready to commit the crime.

The offenders were asked a series of questions regarding the importance of various characteristics of the store and its environment in their decision to rob that particular store. The data, from 133 respondents, indicate that characteristics such as window location, cashier location, lighting, exit location, parking lot size, type of neighborhood, video cameras present, time of day, whether reputation of the store for having money, store being close to other stores, the hours of operation, the race or ethnic background of the owners, prior bad experience with the store, location of the store next to a residence, were not important to more than 50 percent of the offenders. Those factors that appeared to be important in the judgement of the offenders were characteristics, such as the proximity of the store to major and minor roads (56%), not easily manipulated by the staff or store owners.

In describing the robbery, 99 of 128 offenders (77%) who answered the question reported that they did not initially use force. When force was used it was used after the response of the clerk or customers prompted the offender to determine that, in their judgement, force was required at that point. After leaving the store the offenders report that they either went home or to work (46 percent of 130 responses) or went to a nearby public

place (28%), most usually a bar, or stayed in the general area of the store. The majority of offenders reported that they went to and left the store by car. Over half of the offenders indicated that they went to and left the store by car. For those who were arrested, the primary basis for the apprehension was that they were identified by someone who was at the scene who knew them or was able to place them in a job or location. When asked why they committed the crime the offenders indicated that the reason was money and money for drugs in 72 percent of the cases. In response to being asked what they thought their probability of apprehension was before they committed the crime, on a scale from 0-10, 56 percent indicated the chance of being caught was zero, 78 percent indicated that chances were 4 or less.

The offenders were asked what they thought could have been done to prevent the robbery, and they indicated that there could have been changes in characteristics of the store or improvements in police or security presence. When asked what characteristics could be changed about the store to prevent future crimes, their answers paralleled their answers regarding the basis of their selection, with the presence of guards (85%), the proximity of police stations (76%), the presence of police in the area (83%), and the number of individuals inside and outside of the store (72%) being cited as important characteristics that could be altered to prevent these crimes. The offender interviews were conducted in prison.

The above provides a general overview of responses of victims and offenders to questions concerning convenience store robberies. Now we turn to the two primary factors that motivated this research: what we can learn from these interviews about injuries to convenience store workers and what can be done to prevent robberies and injuries to these

workers.

Table 4 provides information from the victims' perspective on the injury that individuals received by whether they were the only clerk working or whether other clerks were present. When there was only one clerk working during the robbery, there was injury in 23.5 percent of the cases; when there was more than one clerk working, injury occurred in 29.5 percent of the cases. From the victims' reports it would appear that the presence of additional clerks did not reduce the probability of injury. Rather, it is the dynamics of the situation and most notably the response of the clerks that seems to influence, at least from the offender's perspective, whether injury will occur.

To assess whether the individuals approach convenience store robberies differently due to previous experience with these robberies, we divided our sample of offenders into those who report no prior robberies (novice) and those who report one or more prior robberies (repeat). Table 5 begins the presentation of data from the interviews using this categorization of the offenders. Based on other research on chance crimes the primary hypothesis is that those who had prior experience would be more rational in their approach to the crime, more organized, and would conduct the crime in ways different than the novice convenient store robber. Table 5 presents information on the behavior of the individuals just prior to the robbery. These data suggest that recidivist offenders were roughly equally likely to have been using drugs or drinking prior to the event. Fifty-one percent of novice offenders and 55 percent of repeat offenders report that they were high when the offense was committed. However, there appear to be some differences in planning. Table 6 indicates that the recidivists (39.6%) were more likely to plan one day or more in advance of the

crime than were the first time convenience store robbers (22.4%). When asked what could be done to discourage them from committing such robberies (Table 7) two factors reached statistical significance: the location of exits and type of neighborhood. Novice offenders were more likely to judge these as important or very important characteristics than were the repeat offenders. In an effort to consider broad categories of characteristics that would have prevented the offender from committing the crime, we collapsed their assessment of individual factors into those characterizing the clerks, the characteristics of the store, police or security guard presence, and all other factors. Table 8 presents the findings for the cross classification of this variable with whether the offender was a repeat or novice convenience store robber. Although there are slight differences in the responses of repeat and novice offenders, the differences are not significant. This suggests there may not be increased levels of sophistication in target selection among repeat offenders.

Finally, we were interested in the ways in which victims and offenders diverged in their assessment of what could be done to prevent robberies and what were the factors that were most important in selecting a store for a robbery. Table 9 contains the responses of victims and offenders to the question of what could be done to prevent the robbery using the broad category of factors noted above. Responses were very similar, with 40 percent of the victims and 48 percent of offenders indicating that store characteristics could have been changed, 27 percent of victims and 23 percent of offenders indicating that police or security increases would have prevented the robbery, and 33 percent of victims and 28 percent of offenders indicating other factors could have prevented the robbery.

Conclusions

What have we learned from this multisite study of convenience store robberies? First, we have again established the value of multisite research. In this case, the small number of convenience store robbers in custody, or otherwise available, means that any single site study would necessarily involve very small numbers of subjects. Second, these data suggest that the number of clerks on duty is not a significant factor in explaining whether convenience robberies are likely to result in injuries to those clerks. Far more important seems to be the interaction between victim and offender. Offenders report that the behavior of the clerk or clerks is far more important than the number of clerks in determining whether they use force in the robbery. Third, clerks appear to believe there is little they can do to prevent the occurrence of robberies and whether they are injured during the robbery. While we found some factors that appear to influence offenders in the selection of stores for robbery, the data suggest a very simple selection process that is guided mostly by the offenders perception of the existence of "place guardians" in the location. Traditional environmental design elements were not identified by offenders or victims as factors that influenced the occurrence of robbery. Fourth, the notion that repeat and novice convenience store robbers differ in their selection of locations, motivation for committing the crime, etc., are not supported by these data. The differences were marginal and similarities were much more prevalent than were differences. Finally, we found that planning for these offenses was minimal, the offenders were motivated by the need for money and drugs, and offenders behavior after the crime commission was poorly planned. These findings offer some suggestions for crime prevention efforts and for theories of robbery.

For many years the effort to prevent convenience robberies and clerk injury has focused on the environmental characteristics of the store and the number of clerks. Whether or not the number of clerks is a factor in robbers' selection of stores, our data indicate that the presence of more than one clerk may not have the desired impact on injuries that result once robbery occurs. Clerk training may be far more important at this point. The data suggest that the behavior of clerks may be the most significant factor in determining the extent of injury that results during these robberies. In our interviews, 57.1 percent of clerks had received no training or had only had the training after the crime occurred. Especially given the turnover in personnel, training must be more frequent and delivered in a manner that allows the clerks to actually receive it. The heavy emphasis offenders place on police and security as effective deterrents may cause us to reconsider our reliance on environmental factors alone. Improving police presence and response may be more important than further enhancements of the store's environment.

Routine activity theory (Felson, 1994), has suggested that the explanation of criminal events lies in understanding victim vulnerability and the level of guardianship a potential victim or place contains. In the convenience store context this has become the focus of environmental design efforts to place the potential victim in a place that minimizes the attractiveness of the victim as a target of motivated offenders. Our research suggests that offenders may not be attuned to these "target hardening" efforts. Rather the existence of "place guardians" ~ those perceived to be assigned the function of protecting the potential victim -- is more important to the offenders. This is not to say that design factors are not important. It may be that the benefit from the improvement of design characteristics has

reached its peak and that design characteristics may be more important in determining the monetary loss associated with the crime than they are in affecting the likelihood of injury during these crimes. As other recent studies using routine activity theory have suggested (Eck, 1994), the person and place guardianship factors may be far more important for some types of crime. Injury-related convenience store robberies appear to be one such type of crime.

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