

TWO-CLERKS: 2000

Rosemary J. Erickson, Ph.D.¹

March 11, 2000

Introduction

A government study, just out, concludes that two clerks do not prevent robbery. Legislators, litigators and government agencies continue to press for two clerks as a way to prevent robberies in convenience stores, yet there is no scientific evidence to support it. This most recent study by NIOSH comes on the heels of their other nine-state study, which concluded that two clerks did not prevent injury in robberies. Taken together, the NIOSH studies confirm that two clerks do not reduce robbery or injury.

Florida

Any evidence for the possible effectiveness of two clerks has, in the past, been based solely and exclusively on information from Florida, but the findings from Florida do not even support the recommendation. Even given the most charitable view of the original Gainesville, Florida studies, which ultimately led to the Florida legislation, the finding after the Florida statewide implementation is that from 1992 to 1995, robberies were **down** by 45% in convenience stores, but homicides were **up** by 50%.² (See Table 1). As shown in Table 2, the rate of decrease in robbery has lessened from 1996 to 1998, as compared to the earlier years, and reportedly the Attorney General's office no longer maintains statistics on homicide, since 1995.

Census of Fatal Occupational Injuries (CFOI) data were obtained from the state of Florida, Department of Labor and Employment Security, Division of Safety for the years 1996 and 1997. They report that there were 14 convenience store homicides in 1996 and 13 in 1997. These figures would indicate that the actual death rate per robbery, taken as a whole, has doubled from 1991 from 3 homicides per 1,000 robberies in 1991 to 6 homicides per 1,000 robberies in 1997. This is the outcome that was predicted, given the doubling of exposure, by adding a clerk. That is, if a robbery does happen, and there are two clerks instead of one, and if there is violence, the chances of death are doubled, which these figures indicate. That is, the death rate per robbery, over all, doubled from 1991 to 1997, the latest year for which figures are available.³ Further, from 1992 to 1998, as seen in Table 3, robberies in Florida have decreased by 30%, but they have decreased at a **greater** rate nationwide, at 45%.

¹ The author is president of Athena Research Corporation, based in San Diego, CA..She can be reached at: RJErickson@AthenaResearch.com.

² Based on data from the Florida Attorney General's Office from 1992, when the legislation was implemented, through 1995. After 1995, the AG's office no longer maintains records on convenience store homicide.

³ It should be noted that these figures are aggregate only, and not based on individual deaths per robbery.

In addition to the information on Florida, four government or government-supported studies, described below, have all concluded that there is, in fact, no evidence that two clerks reduce robbery and/or injury and that the Gainesville results may themselves have been an anomaly.⁴

National Academy of Science Study

The first such study was reported in 1993 by The National Academy of Science⁵. The conclusion was that the Gainesville case "yielded an erroneous conclusion" regarding two clerks. They believe that the reported reduction in robberies from 1987 to 1988 can be more credibly explained by the arrests of the three men suspected of multiple robberies than by the implementation of the two-clerk rule. Further, the convenience store robbery rate in the surrounding county had a similar reduction as Gainesville, even though the stores in the county were not subject to the two-clerk requirement. In other words, they contend that the conclusions that the two-clerk rule was effective fails when rival hypotheses for the observed pattern are considered.

National Institute of Justice Study

The NIJ study was undertaken in 1996, after Congress required the Attorney General to provide a "comprehensive re-evaluation of the effectiveness" of over \$3 billion spent annually on crime prevention.⁶ As part of the study, they evaluated the Gainesville, Florida ordinance requiring two clerks and cite the fact that a plausible rival explanation for the decline in robberies was the arrest of active offenders responsible for a rash of convenience store robberies just before the ordinance took place. Other explanations, they suggest, are that the controversy surrounding the ordinance and statewide efforts to increase the number of clerks may have sensitized the convenience store industry and the police to this problem. In other words, many other changes could have created the long term reduction in robberies, including the changes in stores' operations. "Thus," they conclude, "we cannot be certain the decline was due to the two clerk rule."

NIOSH Nine-State Study

A National Institute of Occupational Safety and Health (NIOSH) study designed to estimate the risk of injury in a robbery situation for various risk factors was reported upon in 1997.⁷ The finding from the surveillance study was that the employee risk of

⁴ For a full report on two clerks, see *Convenience Store Security at the Millennium* by Rosemary J. Erickson, on the NACS Website at <http://www.nacsnet.org>.

⁵ Reiss, A. J. & Roth, J. A., 1993. *Understanding and Preventing Violence*. Washington, D. C. National Academy Press.

⁶ Sherman, L. W. et al., February, 1997. *Preventing Crime: What Works, What Doesn't, What's Promising?* University of Maryland. U. S. Department of Justice, Office of Justice Programs. NCJ 165366.

⁷ Amandus, H. E. et al., May, 1997. "Employee Injury in Convenience Store Robberies." *Journal of Occupational and Environmental Medicine*. 39:5

injury was not significantly different between one-employee (0.106) and multiple-employee (0.111) stores. The results of their study indicate that there is no evidence of increased safety with two clerks over one clerk, and the evidence is insufficient to base a recommendation for two clerks on the results.

Because the risk of injury is not different with one versus two clerks, when there are two clerks in the store, and there is an injury-producing event, the risk of injury is doubled because the potential number of people who might get hurt has doubled. Even if robberies are reduced, by having two clerks on duty, they conclude, they would have to be reduced by more than twice the amount to make up for the number who would be injured because of the increased exposure. In sum, more people may get hurt with two clerks on duty because it does not decrease their chances of getting hurt to have two on duty, and it increases exposure; that is, the number out there to be hurt. In fact, the NIOSH statistics prove that when the unit analysis of *each robbery* is used, rather than *each clerk*, the chances are in fact doubled; that is, .106 for one clerk and .206 for two clerks. Florida's statewide statistics are completely consistent with this finding, with robberies being reduced by 45% in convenience stores, but homicides increasing by 50% in the same time period and the rate of death per robbery doubling.⁸

NIOSH Case-Control Study

This long-awaited study on the issue of two clerks, and other possible security measures, in convenience stores, has just been released.⁹ Using a case-control method, it is based on 400 convenience store robberies in three metropolitan areas of Virginia--Alexandria, Richmond and Norfolk from February 1, 1995 through September 30, 1996. For each case, three matched controls were selected randomly from all stores within a 2-mile radius. The study concludes that the interventions recognized for over twenty years as effective robbery deterrent measures are in fact significantly related to a reduced odds of robbery. The measures found to be most effective include, most importantly, cash control, followed by visibility, training of employees and elimination of escape routes. Multiple staffing was not found to be statistically significant as a factor in reducing the risk of robbery.

Conclusions

This most recent NIOSH study should put to rest the notion of two clerks as a robbery deterrent. It is the study everyone has been waiting for. It's here. Two clerks do not deter robbery. NIOSH's previous nine-state study concluded that having two clerks did not reduce injury. This NIOSH study finds they do not reduce robbery either. It is time to concentrate on the proven security measures and ensure that they are implemented in all stores and to continue efforts in finding new measures that may be effective in reducing robbery and injury.

⁸ Erickson, R J. February, 1998. *Convenience Store Security at the Millennium*. Distributed by the National Association of Convenience Stores, Alexandria, VA.

⁹ Hendricks, S. et al., November, 1999. "A Matched Case-Control Study of Convenience Store Robbery Risk Factors." *Journal of Occupational and Environmental Medicine*, 41:11.

FLORIDA ROBBERY AND HOMICIDE DATA

TABLE 1: ROBBERY AND HOMICIDE AT
CONVENIENCE STORES IN FLORIDA*
1991 - 1995

Offense	1991	1992**	1993	1994	1995	% Change '91-'95
Robberies	3839	3099	2638	3214	2123	-45%
Homicides	12	15	15	12	18	+50%

* Information from Florida Attorney General's Office

** Law went into effect on December 31, 1992

Note: Robbery decreased but homicide increased.

TABLE 2: ROBBERY AND HOMICIDE AT
CONVENIENCE STORES IN FLORIDA*
1996 - 1998

Offense	1996	1997	1998	% Change '96-'98
Robberies	2433	2330	2166	-11%
Homicides	NA**	NA	NA	

* Information from Florida Attorney General's Office

** No data available. The AG's office is no longer maintaining records on convenience store homicides.

TABLE 3: CONVENIENCE STORE ROBBERIES NATIONWIDE (FBI)
COMPARED TO FLORIDA
1992 - 1998

	1992	1998	% Change '92-'98
Nationwide	33,401	18,527	-45%
Florida	3,099	2,166	-30%

Note: Robbery decreased at a greater rate nationally than in Florida.