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# Alcohol and Drug Use Among Robbery-Related Homicide Victims in Trinidad and Tobago

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## Abstract

This study explores the link between alcohol and drugs and robbery-based homicide victimization within the context of routine activities theory. Using 2001–2005 homicide and toxicology data from Trinidad and Tobago, the study considers the general context of robbery-related homicides by identifying common place, victim, offender, and time characteristics. Next, the study examines whether victims of robbery-based homicides were more or less likely to be using alcohol and/or drugs at the time of death than victims of domestic and “street” homicides. The results indicate that robbery-related homicide victims were less likely to test positive for alcohol or be intoxicated and were significantly less likely to test positive for marijuana and cocaine than victims of street homicides. Nevertheless, when considered within a broader context, Trinidad and Tobago robbery-based homicide victims test positive at higher rates for marijuana (13.6%), compared with homicide victims in other locations (6%). The results of this study suggest a firm link between victim substance use and homicide victimization in Trinidad and Tobago, which could help explain escalating violence levels in the country.

## Keywords

homicide, victimization, robbery, routine activities theory, alcohol, drug use

Beginning in the early 2000s, Trinidad and Tobago, a developing nation in the southern Caribbean, was experiencing increasingly high rates of violent crime, particularly homicide (Maguire, Willis, Snipes, & Gantley, 2008). National law enforcement officials,

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together with academic consultants and experienced practitioners, were taking multiple steps to diagnose the causes of the escalating crime. One of the steps involved examining the links between drug use and dealing and violent crime, including observation of trends in toxicology data. This study, using routine activities as a theoretical foundation, relies on 5 years of toxicology and homicide data to explore the role of alcohol and drug use as a contributor to robbery-based homicides. Variations in alcohol and drug use among robbery-based homicide victims, compared with victims of domestic and street homicides, provide some insight into the role of victim substance use as a contributor to homicide victimization in Trinidad and Tobago.

## **Literature Review**

### *Routine Activities Theory*

Cohen and Felson developed routine activities theory around the basic elements of time, place, persons, and objects. Current iterations of routine activities theories also combine elements of deterrence, rational choice, crime pattern, and environmental theories. The general premise is that routine activities, defined by Cohen and Felson as “any recurrent or prevalent activities which provide for basic population and individual needs,” influence criminal opportunities by bringing together offenders and victims in time and space (Arnold, Keane, & Baron, 2005; Cohen & Cantor, 1980). Crime is, therefore, facilitated by the presence of motivated offenders and vulnerable targets/victims interacting in time and space in the absence of capable guardianship. It follows then that crime can be prevented if the potential victim or others can take action to deter it (i.e., if capable guardianship is present; Akers & Sellers, 2004) or if any of the primary elements are not present. Furthermore, the relative presence or absence of the elements of time, space/place, persons, and objects is dynamic, and “the risk of criminal victimization varies dramatically among the circumstances and locations in which people place themselves and/or their property” (Cohen & Felson, 1979, p. 595).

Researchers have found support for various elements of routine activities theory. The importance of crime opportunity and the risk for criminality and victimization has been confirmed (Liska & Warner, 1991), as has the role of the routine activities of offenders and victims merging together in time and space (Arnold et al., 2005; Vazsonyi, Pickering, Belliston, Hessing, & Junger, 2002). Furthermore, opportunity and motivation for crime may be impacted by unrelated situational or environmental factors such as weather (Hipp, Bauer, Curran, & Bollen, 2004), land-use (Hayslett-McCall, 2005), and, in some cases, availability of drugs and/or alcohol (Nielsen & Martinez, 2003).

Support is also apparent for various individual-level risks and protective factors. Deviant lifestyles (Spano & Nagy, 2005) and a documented history of victimization (Arnold et al., 2005) are positively associated with risk of violence, and individuals at high risk for one form of victimization tend to be at higher risk for others (Arnold et al., 2005). Consistent with routine activities theory, Spano and Nagy found social

guardianship to be a protective factor against violent victimization among rural youth. Meanwhile, Cohen and Cantor (1980) concluded that factors related to target suitability and guardianship are also significant predictors for risk of victimization.

Despite findings that are consistent with routine activities theory, complete models of the theory have not been as widely tested, so empirical validity has yet to be established (Akers & Sellers, 2004). Offender motivation is often omitted from models, as it is difficult to measure; when it is included it is often measured indirectly. Furthermore, suitable targets and the absence of capable guardians are also sometimes indirectly measured, partially explaining the strong support for certain elements of routine activities, but mixed support for the theory as a whole (see Spano & Nagy, 2005).

### *The Crime Triangle*

The crime triangle (also known as the problem analysis triangle) is founded on routine activities concepts and provides a simplified approach to analyzing recurring problems of crime and disorder (Center for Problem-Oriented Policing, 2010; Spelman & Eck, 1989). Evidence suggests that crime and disorder are not evenly distributed across time, place, or people; rather, crime tends to cluster in certain ways. The likelihood of crime occurring is potentially curtailed by the presence of offender handlers, victim guardians, and/or place managers (Matthews, 1990). One strategy associated with place managers is third-party policing, which involves law enforcement efforts to convince nonoffenders (usually those with some control over potential offenders' primary environments) to indirectly minimize crime or reduce the possibility that it will occur. Thus, effective policing and problem solving requires recognition of how offenders and victims interact, and understanding how offenders, victims, and places are or are not effectively controlled. Generally, to prevent crime occurrence, it is important to examine behavior, places, persons, and times.<sup>1</sup> When authorities are able to determine the key elements of an incident, they are better able to devise strategies for solving and preventing future crime (see Spelman & Eck, 1989; also Baker & Wolfer, 2003).

### *The Drug-Violence Tripartite Framework*

The current study proposes to use the crime triangle and routine activities theory as a foundation for examining the context of robbery-based homicides. However, it is important to first consider how victim drug use might be related to homicide victimization, given that the relationship between drugs and violence is complex, dynamic, and fluid (Kuhns, 2005). Goldstein's (1985) tripartite conceptual framework provides a basis for understanding drug–violence relationships.

Psychopharmacological violence is violent behavior occurring as a direct result of drug use, whereby the psychoactive substance induces aggressive or violent reactions in the user *or* contributes to violent victimization. Whereas heroin, marijuana, and tranquilizers have all been shown to ameliorate violent tendencies, drugs that contribute to psychopharmacological violence more often include alcohol, stimulants, barbiturates, and PCP (Boles & Miotto, 2003; Kalat, 2001; Kuhns & Clodfelter, 2009). In the case of

robbery-based homicides, the facilitating drugs may just as easily be present in the victim (Arnold, Goldstein, & Brownstein, 1990; Parent, 2004) and the pharmacological impact of the substance may influence victim perceptions, reactions, and decisions.

Economic-compulsive violence includes situations in which chronic drug users feel compelled to commit violent acts in order to acquire money for continued drug use. Robbery is a typical example because it provides immediate financial rewards that can be quickly exchanged for money or drugs. Economically motivated violent crime (and property crime) is more common among narcotic users than previously thought (Chaiken & Chaiken, 1990; also see Nurco, Hanlon, & Kinlock, 1991; Nurco, Hanlon, Kinlock, & Duszynski, 1988). Although some studies indicate that violent crimes and homicides are less often economically motivated (Arnold et al., 1990; Goldstein, Brownstein, & Ryan, 1992), robberies are certainly economically motivated. Substance use can also reduce the capability of self-guardianship during a robbery.

Finally, systemic violence is violence associated with the illegal distribution of drugs. Since alcohol is legal in most countries (with the exception of age restrictions), it is generally not associated with systemic violence. The extent of systemic violence associated with illicit drugs, however, is rather apparent. Systemic violence has been most often associated with the marijuana, heroin, and cocaine and crack markets (Fagan & Chin, 1990), but systemic violence is likely to occur in any illicit drug market and in drug markets that are unstable, new, or changing.

## **Robbery, Routine Activities, and the Crime Triangle**

Some studies have addressed robbery and other violent victimization within the context of routine activities theory. Wang (2002) conducted a descriptive study that applied routine activities theory to the explanation of a series of Asian gang-related bank robberies in a major southern city. His analysis shows that “the robberies resulted from a supply of motivated offenders, the availability of suitable targets, and a low level of capable guardians.” (p. 555). Also relying on a routine activities theoretical framework, Lauritson, Laub, and Sampson (1992) explored the relationships between adolescent activity involvement and the risk of assault and robbery victimization. They found that delinquent youths are more likely to experience assault and robbery victimization.

Spano and Nagy (2005) applied routine activities theory to a larger sample of rural adolescents, focusing on risks of assault and robbery victimization. Their analyses indicated that risk is reduced by social guardianship and linked to certain demographic characteristics and that social isolation of an individual is a strong risk factor for both robbery and assault victimization. Faggiani and Owens (1999) developed a descriptive profile of older (ages 65+) robbery victims, finding that most robbery victims who were aged 85 and older were robbed at home, but most victims between the ages of 65 and 74 were robbed while engaged in routine activities outside of their home. Consistent with routine activities theory, constraining opportunities for crime has been shown to decrease robbery and other crimes (Liska & Warner, 1991).

Other studies have considered the impact of drugs and alcohol on robbery-related homicides. Nielsen and Martinez (2003) explored the effects of alcohol on various types of nonlethal violence, including robbery, in Miami, Florida, from the perspectives of social disorganization and routine activities theories. Alcohol availability in the community had strong positive effects on rates of nonlethal violence. Another study that examined crime rates during the period between 1984 and 1992 in 142 cities determined that cities with higher levels of crack use experienced larger increases in robbery as well as higher (but not more rapidly increasing) homicide rates (Baumer, Lauritsen, Rosenfeld, & Wright, 1998).

### **Robbery-Based Homicides Within the Context of the Tripartite Framework**

Depending on the event circumstances, robbery, and robbery-related homicides could be classified as psychopharmacological, economic-compulsive, and/or systemic violence. For example, a victim under the influence of drugs or alcohol may inadvertently place himself or herself at a higher risk of being robbed, may be unable to adequately defend himself or herself (Goodman et al., 1986), or may inaccurately perceive social cues. Those who reside in drug-infested, high-crime neighborhoods are at higher risk of coming into contact with potential violent offenders. Furthermore, one drug user may rob another for drugs or money, or robbery could occur during the course of an illicit drug transaction.

Robbery-based homicides may have psychopharmacological characteristics if substances ingested by the victim (or the offender) prior to the incident cause him or her to be less aware of the risks involved with certain activities or situations or more willing to place himself or herself in such situations. Drugs that lower inhibitions or decrease attention, such as alcohol, may have this effect. Research has supported the notion that alcohol use increases risk of violent victimization (Allgulander & Nilsson, 2000; Lindqvist, 1991; Škibin, Bilban, & Balačić, 2005), including homicide (Smith, Branas, & Miller, 1999).

Some hypothesize that victims may sometimes facilitate homicide by inciting the offender, as alcohol acts as a central nervous system depressant and may suppress inhibitions, thereby encouraging expressions of violent or aggressive behavior (Lindqvist, 1991; Tardiff, Gross, & Messner, 1986). Furthermore, individuals who are intoxicated may be perceived as easier (more suitable) targets for robberies and other crimes that later end as homicides (Goodman et al., 1986). In their study of 2,365 police–citizen encounters, McClelland and Teplin (2001) found that though suspects seemed more likely than victims to be intoxicated, intoxication was not a powerful predictor of the perpetration of violent crime but still contributed substantially to violent victimization.

Other drugs may also limit the ability of victims to defend themselves from attack. Opiates facilitate relaxation and withdrawal, hallucinogens can result in thought disorder,

and LSD produces distorted sensations. Even marijuana creates intensified sensory experiences and a distorted sense of time (Kalat, 2001). Withdrawal effects of cocaine or amphetamines might also place users at greater risk of victimization. In their study of 573 murder victims in Manhattan in 1981, Tardiff and colleagues (1986) discovered that drugs were more likely than alcohol to be found in the blood of drug-related homicide victims. On the other hand, robbery-related homicide victims were less likely to have alcohol or drugs in their systems or had lower alcohol levels.

Goldstein, Brownstein, Ryan, and Bellucci (1997) studied data on 414 drug-related crimes in New York City in 1988. Crack was the principal drug involved in a majority of the homicides, but systemic violence accounted for an overwhelming majority of the murders. This conclusion differs from that of Goldstein and colleagues, who found that the two most common types of drug-related homicide were psychopharmacological and systemic. Parent (2004) studied the violent and nonviolent victimization of cocaine users, finding that 92% of the respondents claimed to have been victimized at least once. Women using cocaine were more likely to be victimized than men. Applied to the study of robbery-related homicides, intoxicated females may be at increased risk for robbery-related homicide victimization.

### *Justification for the Present Study*

Whereas past research has examined offender characteristics and risk factors associated with homicide offending, victim-focused studies are not as common. Furthermore, the impact of victim drug use within the context of robbery-based homicides is a relatively unexplored area. Robbery-related homicide victims may be more likely to have used drugs or alcohol prior to death. Furthermore, drug users often carry higher amounts of cash with them, and being under the influence of a drug or alcohol may curtail their ability to defend themselves from attack. Substance use may also impair reasoning and judgment, causing victims to unintentionally place themselves in risky situations.

The primary purposes of this study are to develop a profile of the typical robbery-based homicide event and to explore the link between drug use and robbery-based homicide victimization in Trinidad and Tobago. The profile will allow us to examine the typical characteristics of robbery-based homicide events, including drug and alcohol use by the victim, which can also illuminate possible key differences between robbery-based homicides and other types of homicides. Using homicide victim and toxicology data from 2001-2005, this study will assess victim and homicide event characteristics for all robbery-related homicides that occurred during that timeframe. The following two primary research questions will be addressed:

*Research Question 1:* What were the common place, victim, and offender characteristics of robbery-related homicides in Trinidad and Tobago?

*Research Question 2:* Were victims of robbery-based homicides more or less likely to be using alcohol and/or drugs at the time of their death than victims of other types of homicides?

More specifically, the study will develop a profile of the typical robbery-related homicide within the context of the crime triangle/routine activities (offenders, targets, locations, and times) and explore whether alcohol and drug use levels and patterns are different, or possibly changing, among robbery-based homicide victims compared with victims of other types of homicides.

## Method

This study began with a database of all homicides ( $N = 1,223$ ) from 2001 to 2005 using crime data initially gathered from the Trinidad and Tobago Police Service (TTPS) computer databases and files. A list of murder victims and some background information was exported from the TTPS data systems into a database file. This background information included victim and offender demographic information, date, time, and location of the murder, weapon used, and the assumed motive if known. The data also include a variable containing some general facts of the case (i.e., a short story of the circumstances under which the body was found as provided by TTPS).

We then obtained electronic copies of every toxicology report from January 2001 to December 2005 directly from the Forensic Science Centre (FSC) of Trinidad and Tobago. In an effort to collect every available homicide case (as opposed to murders, which would not include justifiable homicides), every toxicology report that FSC had available on their computers was obtained. The broader data set included toxicology assessments for road traffic accidents involving deaths, sudden and suspicious deaths, suicides, and homicides. Deaths that were identified as *homicides* were labeled as such (within the report file name), and these were extracted and analyzed for this study.

The toxicology reports provide the results of toxicological testing of one or more victim samples of blood, urine, stomach contents, and/or organ tissues. In some cases, two separate reports were available for a victim, reflecting different samples that were submitted at different times and/or by different police officers. When these situations occurred, we combined the results and used the earliest "Case Reported Date" if that date closely matched the homicide date. Drug samples were first screened using an enzyme immunoassay instrument and then confirmed using a Gas Chromatograph Mass Spectrometer. Each toxicology report contained information indicating the presence or absence of alcohol, whether the alcohol level reached the legal definition of intoxication (defined as 0.08% mg/ml or above in Trinidad and Tobago), and the presence or absence of various drugs of abuse. The standard toxicology testing process typically included a test for ethyl (alcohol), THC (marijuana), cocaine or cocaine metabolites, and opiate indicators (heroin or other opiate-based drugs). As such, our analyses focused on four primary drugs in Trinidad and Tobago: alcohol, marijuana, cocaine, and opiates. Recent research and other external indicators suggests that additional drugs may be abused in Trinidad and Tobago, and those drugs may contribute to violence and violent victimization (CARIDIN, 2002; Valdez & Torry International, 2005). However, we were unable to consider those drugs within this study. Nevertheless, the majority of evidence suggests that these are the four most frequently abused drugs in Trinidad and Tobago.

Data from the toxicology reports were then merged with the homicide data. Individual case matches were achieved by relying on the first and last names of the murder victims, chronological correspondence between the date on which the tested sample was submitted to the FSC and the date of the homicide, and other identifying characteristics of the victim's background information. Throughout the matching process, the toxicology report was regarded as the official record of the deceased when documentation discrepancies within the homicide database were identified.

## Results

A series of analyses were used to develop an overall profile of robbery-related homicides in Trinidad and Tobago from 2001 to 2005. The available data included descriptive characteristics of the homicide event, demographic characteristics of the victim, witness descriptions of any suspects, and clearance rates. Using the database of 1,223 murders, robbery-related homicide cases ( $N = 163$ ) were first profiled and then compared to other types of murder victims with respect to victim alcohol use, alcohol intoxication, and drug use (specifically marijuana, cocaine, and opiates/heroin).

### *Crime Triangle Profile of Robbery-Related Homicides*

*Place/location.* There are 9 police divisions used by the Trinidad and Tobago Police Service and more than 60 police stations spread throughout the country. The capital of the country is in Port of Spain, which is also the police division with the largest population and the highest crime rates. Not surprisingly, robbery-related homicides most often occurred in the Port of Spain division, accounting for 23.3% of the robbery-related homicides (see Table 1) followed by the Northern division, with 21%. These two divisions, located in the northern part of Trinidad, are typically known to have larger populations, higher crime rates, and more and better organized gang activity when compared to other divisions. Most of the other divisions are located in rural areas throughout Trinidad. Generally, the northern parts of the country are more densely populated than the southern areas. Tobago is a separate island altogether within the two-island country and is a known tourist location for Trinidadians and others. Among specific police stations, the Besson Street police station, located in the Port of Spain division and in an area that is highly populated with organized gangs, reported the highest number of robbery-related homicides (11.7% of the 163 cases). Alternately, no robbery-related homicides occurred in Tobago during the 5-year timeframe of study.<sup>2</sup>

The majority of robbery-related homicides occurred outside (73 or 44.7%), whereas 55 homicides (33.7%) occurred inside (38 were committed in a residence and 16 in a business), and 33 homicides (20.2%) occurred in or around a vehicle. Only one robbery-related homicide occurred in a bar. Overall, robbery-related homicides were significantly more likely than all other homicides to occur in a business or a vehicle.

*Crime time.* Again, time is an important factor in routine activities and crime pattern theories. Comparing robbery-related homicides across days of the week, the number of homicides generally appeared to increase as the week progresses. Of the



**Table 1.** Location and Setting of Robbery-Related Homicides Compared to All Other homicides

	Robbery-related	All others
<b>Police divisions</b>		
Central	11.0	6.7
Eastern	3.1	4.3
North Eastern	11.0	13.3
Northern	20.9	17.6
Port of Spain	23.3	29.4
South Western	9.2	4.4
Southern	11.7	7.9
Western	9.8	13.6
Tobago	0.0	2.5
Missing	0.0	.1
Total	163 (100.0)	1060 (100.0)
Chi Square = 21.9, Cramer's V = .134, significance = .009		
<b>Location types</b>		
Boat	.6	.2
Inside bar/pub	.6	1.5
Inside business	9.8	1.8
Inside residence	23.3	18.9
Outside	42.9	65.6
Vehicle	20.2	5.7
Water	1.2	.6
Other	0.0	2.8
Unknown	1.2	3.0
Total	163 (100.0)	1060 (100.0)
Chi Square = 92.9, Cramer's V = .276, significance = .000		

163 robbery-related homicides, 30 (18.4%) took place on a Saturday and 28 (17.2%) on a Friday. Three of the 163 robbery-related homicides were missing information on the time of the murder; of the remaining 160 cases, 38% (62) occurred between 6:00 pm and 1:00 am.

*Victim characteristics*

*Age, gender, and race:* As a basis of context, the general population in Trinidad and Tobago includes the following ethnic groups—Indian (South Asian) 40%, African 37.5%, mixed 20.5%, and Other 1.2%. The gender ratio for citizens in the 15- to 64-year age range was 1.109 male(s)/female. Finally, the age group distributions were as follows: 0 to 14 years—19.5%, 15-64 years—71.6%, 65 years and older—8.9% (Central Intelligence Agency, 2007).

**Table 2.** Demographic Comparisons of Robbery-Related Homicide Victims Compared to All Other Homicide Victims

	Robbery-related	All others
Mean Age	43.9	31.6
$t = -9.8$ , significance $< .000$		
African	28.2	48.5
East Indian	20.9	11.5
Other	8.0	5.7
Unknown	42.9	34.3
Total	163 (100.0)	1060 (100.0)
Chi Square = 24.4, Cramer's V = .176, significance $< .000$		
Male	87.1	87.7
Female	12.9	12.2
Total	163 (100.0)	1060 (100.0)

Note: differences were not statistically significant

Robbery-related homicide victims ranged between the ages of 16 to 89, with most between 20 and 65 years of age (there is a fairly even distribution of homicides across this age range). The mean age was 44 years (median = 42, mode = 44), which was about 10 years more than the average age for all other homicide victims (mean = 32, see **Table 2**). Similar to other homicides, the vast majority of robbery-based victims were men (87.1%). Most of the victims were African (49.5%) and East Indian (36.6%) among those for whom race data were available at the time of data collection. Robbery-based homicide victims were almost twice as likely as other victims to be Indian, but significantly less likely to be African.

*Drug and alcohol use rates:* We next examined drug and alcohol use rates across homicide motives.<sup>3</sup> Again, out of 1,223 homicide cases, 163 were classified as “robbery-related” although 485 cases had undetermined motives at the time of data collection.<sup>4</sup> Sixteen robbery-related cases lacked matching toxicology information. Of the remaining 147 robbery-related homicide victims, 53% had neither alcohol nor drugs in their systems. About 41.5% had alcohol *or* drugs, and 5.4% had alcohol *and* one or more drugs present. Almost 32% of the 147 victims had alcohol in their systems, and 5.5% of the robbery-based homicide victim sample was legally intoxicated (Table 3).<sup>5</sup> The mean BAC was 45.6 milligrams per 100 milliliters of blood, which was significantly *lower* than the mean of 68.4 milligrams for all other victims.

Thirty victims, or 18.4% of the 147 robbery-based homicide victims, had at least one drug of abuse present in their systems. Twenty victims (13.6% of all robbery-based homicide victims with drug information) tested positive for marijuana, 3 (10%) tested

**Table 3.** Percentage of Victims Testing Positive for Alcohol and Drugs: Robbery-Related Homicide Victims (N = 147) Compared to All Other Homicide Victims (N = 927)

	Robbery related	All others
Alcohol (n.s.)	32.0	31.2
Intoxicated (n.s.)	19.1	29.1
Marijuana	13.6	31.4
Chi Square = 19.5, Cramer's V = .135, significance < .000		
Cocaine	2.0	8.0
Chi Square = 6.7, Cramer's V = .079, significance < .009		
Opiates (n.s.)	2.1	1.0

Note: n.s. = nonsignificant; differences were not statistically significant. The mean BAC for robbery-related homicide victims (45.6) was significantly lower than the mean BAC for victims of all other forms of homicide (68.4,  $t = 15.1, p < .001$ ).

positive for cocaine, and 3 (10%) for opiates. Not surprisingly, marijuana was the most common drug found since it is widely used and stays in the body for a longer period. That said, when comparing robbery-related victims to all other victims, robbery-related victims were significantly *less* likely to test positive for marijuana or cocaine.

*Offender characteristics—suspects, relationship to victims, and weapon used.* The available homicide data included the number of suspects, if any, for each case regardless of whether or not it had been solved. More than 50% of the cases indicated one or two suspects (Table 4), and robbery-related homicides tended to have more suspects than other homicides. Despite the number of suspects, in 96% of the robbery-based homicides the relationship between the victim and perpetrator was unknown or missing at the time of data collection (this finding is also likely related to a persistent unwillingness among witnesses to identify attackers, as discussed below). Finally, about 58% of the robbery-related victims were killed by firearms and 21% died as a result of stabbings. Nineteen victims (11.6%) were killed by bodily force/strangulation or via the use of a blunt object. Other homicide victims were less likely to be killed by body force/strangulation or stabbing than were robbery-based victims and more likely to be killed by gunshot.

### *The Role of Alcohol and Drugs in Robbery-Related Homicides*

As mentioned previously, of the 1,223 cases in the sample, 485 lacked information on motive at the time of data collection. Of the remaining 738 cases, 181 (24.5%) were recorded as gang related, 173 (23.4%) were considered altercations, and 163 (22.1%) were robbery related. Less frequently represented were drug-related homicides (87 or 11.8%) and domestic homicides (71 or 9.6%). Based on anecdotal information collected while on site, we determined that some motive classifications used in the homicide data set were not mutually exclusive. The robbery-related and domestic motives

**Table 4.** Offender Characteristics, Including Number of Suspects, Relationship Between Offender and Victims, and Weapon/Method Used, Among Robbery-Related Homicides Compared to All Other Homicides

	Robbery related	All others
Number of suspects		
0 or unknown	34.4	46.5
1	24.5	36.2
2 or more	41.1	17.3
Total	163 (100%)	1,060 (100%)
Chi Square = 49.5, Cramer's V = .201, significance < .000.		
Relationship to victim		
Known	4.3	13.2
Unknown	95.7	86.8
Total	163 (100%)	1,060 (100%)
Chi Square = 10.6, Cramer's V = .093, significance < .001		
Weapon/method used		
Body force/strangulation	6.7	3.3
Blunt object	4.9	5.1
Stabbing/cutlass	20.9	17.0
Gunshot	58.3	64.1
Other	0.0	2.2
Unknown	9.2	8.4
Total	163 (100%)	1,060 (100%)
Chi Square = 10.1, Cramer's V = .091, significance .073		

were considered reliable and valid classifications since it is fairly easy to recognize when a homicide is connected to a robbery or to a domestic dispute situation. However, gang-related, drug-related, and altercation motives were not as easy to diagnose and likely were not mutually exclusive categories. Many homicides may be placed in more than one category, and the eventual decision may be inconsistent across homicide detectives or divisions. Therefore, we also analyzed the data using just three primary motive categories—robbery, domestic, and other (or “street-related” homicides).

Virtually the same percentage of victims in each category had alcohol (street-related—33.6%, robbery-related—32%, domestic—34%). Eleven percent of victims of street-related motives were legally intoxicated, compared with 6.1% of robbery-related homicide and 7.5% of domestic homicides. However, none of these differences was statistically significant (Table 5).

Forty-five percent of the victims of street-related motives tested positive for one or more drugs, compared with 20% of robbery-related homicides and 15% of domestic homicides. The street-related motives category accounted for 85% of the 246 victims

**Table 5.** Percentage of Victims Testing Positive for Alcohol and Drugs: Robbery-Related Homicides Versus Domestic and Other Homicides (N = 661)

	Domestic	Robbery-related	Others
Alcohol (n.s.)	34.0	32.0	33.6
Intoxicated (N = 220) (n.s.)	7.5	6.1	11.1
Marijuana	9.4	13.6	36.9
Chi Square = 40.2, Cramer's V = .247, significance = .000			
Cocaine	1.9	2.0	8.7
Chi Square: 10.0, Cramer's V = .123, significance < .01			
Opiates (n.s.)	1.9	2.0	1.3

Note: n.s. = nonsignificant; differences were not statistically significant.

with one or more drugs present, robbery-related accounted for 12%, and domestic homicides had just 3% (Chi Square = 41.2, Phi/Cramer's V = .250,  $p < .000$ ).

Significantly more victims of street-related motives (36.9%) tested positive for marijuana compared to robbery-related (13.6%) and domestic victims (9.4%, Chi Square = 40.2, Phi/Cramer's V = .247,  $p < .000$ ). Furthermore, significantly more victims of street-related motives had cocaine in their systems (8.7%), compared to robbery-related (2.0%) and domestic victims (1.9%, Chi Square = 10, Phi/Cramer's V = .123,  $p < .007$ ). Based on strength coefficients, these associations are weak to nearly nonexistent.

## Discussion

To summarize, the typical Trinidad and Tobago robbery-related homicide victim was a 44-year-old African or East Indian male, who was shot by unknown assailants outside on a weekend night in the Port of Spain or Northern divisions. About a third of robbery-related homicide victims had alcohol in their systems at the time of death and 6% were legally intoxicated. Eighteen percent of these victims tested positive for drugs, the most common of which was marijuana.

These toxicology results can also be considered within a broader context by comparing the Trinidad and Tobago data to mean estimates derived from two recent meta-analyses, one focusing on alcohol (Kuhns, Wilson, Clodfelter, Ainsworth, & Maguire, in press) and the other focusing on drugs (Kuhns, Wilson, Maguire, Ainsworth, & Clodfelter, 2009). With respect to alcohol, Trinidad and Tobago robbery-related homicide victims tested positive at rates (32%) that were slightly lower than the mean rate (48%) across 61 other locations in the United States and in other countries. In terms of alcohol intoxication, on average, robbery-based homicide victims in Trinidad and Tobago were intoxicated at much lower rates (6.1%) than were homicide victims from other locations (33%; Kuhns et al., in press). However, robbery-based homicide victims tested positive at double the rate for marijuana (13.6%) when compared with homicide victims in other locations (6%; Kuhns et al., 2009).

There are theoretical reasons to suggest that alcohol and drug users may be at increased risk for violent victimization. First, drug users may become victims of economic compulsive or systemic violence (including robbery) while engaged in the process of purchasing drugs (Goldstein, 1985). Second, use of some substances, including alcohol, can place an individual at increased risk for victimization (i.e., make them a more suitable target) and perhaps limit their ability to effectively defend themselves, accurately assess situational and social cues, and respond appropriately to potential threats (e.g., facilitate incapable self-guardianship). Finally, the use of other drugs (alcohol, cocaine, stimulants) can pharmacologically facilitate aggressive behavior (Boles & Miotto, 2003), which may result in subsequent violent victimization, although these relationships are not necessarily causally confirmed (Kuhns & Clodfelter, 2009).

This study suggests that victims of robbery-based homicides were no more likely to test positive for alcohol than were victims of domestic or street homicides. However, Trinidad and Tobago robbery-based homicide victims were significantly less likely to test positive for marijuana compared with other homicide victims in that country, yet were twice as likely to test positive for marijuana compared with homicide victims from other locations (Kuhns et al., 2009). The rates of drug use among robbery-related homicide victims suggest that some homicide victims are also offenders themselves (i.e., drug users and purchasers). Since illegal drug markets are inherently dangerous, drug users interested in purchasing marijuana are increasing their risk for violent victimization. Furthermore, these individuals may purchase drugs (and reside) in or routinely frequent gang-infested, high-crime areas. In essence, these individuals place themselves in greater danger if their routine drug-purchasing activities occur in crime-prone areas, during crime-prone times, and around crime-prone offenders. In Trinidad and Tobago, as is the case elsewhere, drug markets are typically controlled by gangs, and gangs tend to fight over drug-selling territories (e.g., systemic violence).

Finally, increased numbers of drug purchases further increases exposure to motivated offenders or increases the likelihood of encounters with police, violent, or otherwise. During observational rides with Trinidad and Tobago officers, it was readily apparent that a number of marijuana sellers tend to distribute smaller amounts to larger numbers of users on a daily basis (as opposed to buyers purchasing larger amounts that would last longer). As such, these smaller, daily-use purchases increase the chances of unanticipated problems or consequences arising during the illegal transactions. Police may be interested in working to minimize the numbers of transactions that occur in an effort to limit victim exposure to motivated offenders and violent drug markets.

### *Crime Prevention Strategies and Policy Implications*

Situational crime prevention, based on routine activities and the crime triangle, emphasizes prevention, rather than detecting and punishing offenders (Center for Problem-Oriented Policing, 2006). Preventative efforts integrate the ideas that “opportunity makes a thief” (Clarke & Felson, 1993; Felson & Clarke, 1998) and that offenders make choices to capitalize on opportunities (rational choice theory and routine activities theory). Two

basic types of crime-reducing measures are (1) reducing the physical opportunities for offending, and (2) increasing the chances that an offender is caught (Clarke, 1980). Constraining opportunities has been shown to decrease robbery and other crimes (Clarke, 1980; Hayslett-McCall, 2005; Liska & Warner, 1991), and the implementation of problem-oriented policing strategies and engaging the community have also been effective (Baker & Wolfer, 2003; Spelman & Eck, 1989).

In the case of robbery and robbery-related homicide, certain measures might be taken to reduce the opportunities and lessen the likelihood that a potential offender would choose robbery as a means of meeting financial needs (see Bellamy, 1996). Within a residence, homeowners can install screens or security alarms to increase the effort required of an offender and help protect a residence during the day when the likelihood of victimization is higher. Increased surveillance could increase the perceived risks to potential offenders. Clearly identifying property or removing it from view of a potential offender would reduce rewards, and avoiding or settling disputes (such as those between drug dealers and users) could reduce provocations that may lead to violence. Effective approaches to reducing illicit drug use and drug dealing (e.g., substance abuse education/treatment, enforcing drug laws, or problem-oriented policing projects) can also affect the likelihood of drug-related robbery and subsequent homicide.

Based on this study, certain steps can also be taken to reduce robbery-related homicides. Helping citizens to understand the potential risks of victimization in illegal drug markets could reduce robbery-based homicide opportunities. Although the present analyses did not find the use of alcohol to be significantly higher among robbery-related homicide victims compared to other types of homicide victims, the use of marijuana was indeed higher among Trinidad and Tobago victims than among homicide victims in other jurisdictions (Kuhns et al., 2009). As such, addressing drug and alcohol use consequences via educational campaigns could increase awareness. Police departments might also increase the real or perceived risks for offenders by expanding surveillance using electronic devices as well as additional police officers in areas where robbery-related homicides are more frequent. According to these data, increasing surveillance and police presence in outdoor areas, toward the end of the week, and at night would most likely have the most impact on robbery-based homicides.

## **Limitations and Suggestions for Future Research**

Victim studies are a less common, but growing, area of research in criminal justice. Such studies are necessary when using the crime triangle and routine activities as a basis for crime prevention and are especially helpful when offender information is lacking. This study focused on a very specific subgroup of homicide victims in one developing country. Other efforts have examined homicide event characteristics in other countries that have been historically shielded from research inquiry (Bye, 2008; Pridemore, 2004). Further research in other countries of similar and varied size, economy, and demographics is necessary. Continued exploration of toxicology results across victims of other forms

of homicide would also be useful. The accuracy of the present results may be limited due to the large number of cases with missing motive information (motive, of course, can be assigned at a later point in the investigative process). One of the reasons robbery-related murders were studied was that the robbery-related motive is one of the more reliable classifications used. Further studies could address drug toxicology variations in victims of other types of homicides, assuming the motive data are more consistently and accurately recorded and are mutually exclusive.

With the data used in this study, we were unable to ascertain whether the robbery-based homicide victims were truly victims, were initially offenders or aggressors, or were otherwise choosing to place themselves at increased risk (e.g., were gang members, frequent drug users, or the like). These distinctions have clear implications for the relevance of routine activities, for distinguishing motivated offenders from vulnerable victims and for identifying high-risk locations and times for robbery-based homicides. Future studies might consider using offender interviews supplemented with narrative data from court records (Pridemore & Eckhardt, 2008) to accurately disentangle the roles of offenders and victims in robbery-based homicides.

Finally, this study does not address the *risk* of becoming a robbery-based homicide victim or the impact of substance use on increasing that risk. The results do not allow one to infer that reducing drug and/or alcohol use would have an impact on reducing the risk of robbery-based homicide victimization (or other forms of homicide victimization). Future studies might address the risk of robbery victims becoming robbery-based homicide victims. Alcohol use, even among young people, is rather prevalent and marijuana is readily available in Trinidad and Tobago (Katz & Fox, 2008). Citizen and law enforcement surveys could effectively assess societal attitudes toward efforts to decrease substance use, and educational campaigns could be used to help inform citizens of the risks of substance use, purchasing, and abuse.

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### **Notes**

1. Time is an implied element in some explanations of the Crime/Problem Analysis Triangle (e.g., <http://www.popcenter.org/about/?p=triangle>).



2. Other studies might break down the crime triangle further and examine the drug and alcohol toxicology data across event locations and times, and among various types of offenders (as opposed to victims, which was the primary focus in this study). With respect to location, we did explore this preliminarily by rerunning some analyses across three general location types - inside, outside, and in and around a vehicle. We found that in Trinidad and Tobago homicide victims who were killed outside were more likely to test positive for marijuana, cocaine, and combinations of drugs and alcohol. This finding is consistent with the notion that outdoor homicides might be more often linked to drug purchasing or dealing and/or to other forms of criminal involvement (e.g., gang involvement).
3. Analyses also compared drug and alcohol rates across demographic subgroups, but none of the results were statistically significant.
4. Almost 68% of both robbery-related homicides and all other homicides remained unsolved at the time the data was collected.
5. Trinidad and Tobago uses a standard legal intoxication threshold of 80 milligrams per 100 milliliters of blood (i.e., .08)

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