

A comparative profile of violent clients of prostitute women

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Abstract

To be effective and meaningful, offender profiles must be based on empirical comparisons of offenders and non-offenders' characteristics. Prostitute women have the highest homicide victimization rate of any population of women ever studied. Violent crimes against prostitutes tend to be difficult to solve and involve low clearance rates, which underline the need for accurate and actionable offender profiles.

We conducted a matched case-control study in which we compared clients who assaulted, raped, and/or killed prostitute women with clients arrested for patronizing prostitutes in the same jurisdictions and time periods. We identified client perpetrators of cleared (solved) prostitute homicides, assaults, and rapes in a national search of US media sources. Controls were men arrested for patronizing in the same time period and jurisdictions in which a case encountered his victim(s). We matched 5 randomly selected controls to each perpetrator. There were 118 cases with suitable controls.

Violent clients usually picked up their victims in the same areas where police arrested clients for patronizing. Cleared violent crimes against prostitutes involved long periods of time between the perpetrator's (first) attack and his arrest (e.g., a median of almost 7 months for prostitute killers). The matched case-control analysis showed that violent clients and controls were similar in terms of age and distance between their residences and victim encounter/arrest locations. However, violent clients were less likely than controls to be white, be underweight or severely/morbidly obese, and drive cars (as opposed to other types of motorized vehicles). Violent clients were also much more likely to have a criminal history of violent, rape, and property offenses, and substantially less likely to have a criminal history of miscellaneous other (non-violent, non-property, non-sex, non-patronizing) offenses than controls. Men with a criminal history of violent and/or rape offenses comprise a pool that would include 40% of prostitute killers (47% of serial prostitute killers). In addition, meaningful proportions of clients arrested for patronizing in two jurisdictions had less money in their possession than the price they had agreed to pay for sex or carried weapons at the time of arrest, suggesting the potential for violence in clients' interactions with prostitutes.

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Chapter 5

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Comparison is a fundamental process in generating scientific knowledge. Most objective, empirical offender profiles, however, are summaries of offenders and their offenses and thus lack a comparative basis. Without comparison to non-offenders, it is difficult to know how offenders differ from the general or other relevant reference population (Fox & Levin, 1998). Comparisons between offenders and non-offenders indicate the characteristics that most distinguish offenders and can narrow the range of potential suspects to investigate more effectively than offender summaries alone.

Prostitute women are assaulted, raped, and killed at exceedingly high rates. For instance, in a prospective study, prostitute women who worked in Colorado Springs, USA, between 1967 and 1999 had a higher homicide victimization rate (229 per 100,000 person-years; standardized mortality ratio = 18) than any set of women ever studied (Potterat et al., 2004). Nearly all homicides observed in this cohort occurred while the victims were working. This and other research indicates that prostitute women account for approximately 3% of female homicides in the USA (chapter 4). Male clients

of prostitute women constitute the large majority of the perpetrators of prostitute homicide in the USA (chapter 4) and most of the perpetrators in Canada (Lowman, 2000) and the UK (Kinnell, 2001b).

Effective methods for profiling perpetrators of violence against prostitutes are urgently needed. Violent crimes against prostitutes are difficult to solve for a variety of reasons (Dudek, 2001; Lowman & Fraser, 1996), resulting in a low clearance rate. For instance, only 58% of prostitute homicides in North Carolina in 1991-3 were solved (Decker et al., 2002), in contrast to approximately 70% of all homicides nationally during those years (Wellford & Cronin, 2000). Furthermore, a number of prostitute serial homicide investigations included tens of thousands to millions of persons as potential suspects, severely hampering the efficiency of these investigations (Keppel & Birnes, 2003; Rossmo, 1997; Smith, 1991).

Researchers have sought to compare perpetrators of prostitute homicide with clients of prostitute women, but their efforts have been hindered by geographically and temporally incommensurate samples of perpetrators and clients as well as indirect, crude, and incomparable measures for the two sets of men (Kinnell, 2004; Lowman & Fraser, 1996; Lowman, 1989; Salfati, in press). Cook and colleagues rigorously compared criminal histories of homicide offenders in Illinois, USA, with those of the general population in the state (Cook et al., 2005). Although other characteristics were not examined and the types of homicide were not differentiated in this study, it exemplifies the comparative method necessary for improving offender profiles.

In this paper, we report a matched case-control study in which we compare clients who assaulted, raped, and/or killed prostitute women with clients arrested for

patronizing prostitutes in the same jurisdictions and time periods. Our analyses focus on observable characteristics or those that can be readily assessed by police. We sought to identify characteristics that differentiate violent clients from other clients and also define subsets of men who are particularly likely to include perpetrators. Moreover, we estimate the potential for violence in patronizing interactions based on information in prostitution arrest records.

Methods

Cases

We identified client perpetrators of cleared (solved) prostitute homicides, assaults, and rapes in a national search of US media sources. Our search procedures are detailed in chapter 4 and thus we provide only a summary here. In 2004-5, we searched several national newspaper databases, archives of selected metropolitan newspapers, the World Wide Web, and the academic and “true crime” literature for relevant incidents. We supplemented this search with media reports of attacks of prostitutes that colleagues informed us about or we discovered incidentally, as well as incidents that were documented in prostitution arrest records we analyzed for other purposes (chapters 2 & 3). In addition to the search terms for prostitute homicide described in chapter 4, we also used “prostitu*” and “rape*” and “prostitut*” and “assault*” as search term pairs when querying electronic databases and search engines. When information on key aspects of a perpetrator, victim, and/or incident was lacking, we performed specific searches using the same media sources and online databases such as the Social Security Death Index. Altogether, we examined more than 14,700 articles and documents while conducting the search. Furthermore, we

augmented information on perpetrators and their attacks in selected jurisdictions (Connecticut; Kansas City, Missouri; Minneapolis, Minnesota; Texas; Virginia; and Washington state) by requesting incident reports from the local law enforcement agencies that had investigated these cases and searching online inmate databases provided by state correctional agencies. We included in analysis only those perpetrators who were known clients or whom we inferred to be clients (i.e., the available facts from the investigation were consistent with such a designation and included no contrary indications).

Controls

Controls were men arrested for patronizing in the same time period and jurisdictions in which a case encountered his victim(s). Between 2000 and 2005, we sought prostitution arrest data from approximately thirty selected local jurisdictions in the US and from the central computerized criminal history (CCH) repository for each of the 50 states (chapter 2). We included in analysis only those cases with suitable controls.

Most client arrests in these communities occurred in stings with female police officers working as decoys. There is little a client can do to detect a decoy or avoid arrest once a negotiation for a sex act and price has been completed; similarly, police exercise very little discretion or control over which clients are ultimately arrested. Stings were conducted in areas with high numbers of visible street prostitutes and complaints about prostitution (chapter 2). Consequently, arrested clients approximate a representative sample of clients of street prostitute women in a community, weighted by frequency of patronizing activity.

We defined clients in the prostitution arrest data sets in differing ways depending on the information included in arrest records. Arrest records for Minnesota, New Mexico, New York, Virginia, and most jurisdictions in Washington state indicated patronizing-specific arrest charges (as opposed to a general prostitution offense). Connecticut provided conviction records that included patronizing-specific charge information.

Other jurisdictions did not have or record patronizing-specific charges, and the arrest records included information on unspecified prostitution charges (buying or selling not distinguished; charges related to pimping, procuring, and related activities were separate, however). For two jurisdictions (Kansas City, Missouri, and Portland, Oregon), we defined clients to be men who were arrested for “engaging in prostitution” or “soliciting for immoral purposes” within 2 hours and 600 meters (road distance, as measured by ArcView 3.0a with Network Analyst 1.0b [Environmental Research Systems Institute, Inc.]) of at least 3 other such men. This definition corresponds to spatiotemporal patterns of client arrests in stings and yields extremely few, if any, men falsely identified as clients in these and other data (chapter 2).

For other jurisdictions (Arizona, Florida, Texas, and some jurisdictions in Washington state), the arrest records lacked patronizing-specific charges and time and address of arrest. In these data sets, we defined clients to be men who were arrested on dates when 5 or more men were arrested on prostitution charges (for small jurisdictions, we defined clients as men arrested on dates when 3 or more men were arrested). In arrest data from 12 large metropolitan jurisdictions that included patronizing-specific charges, on average 95% of the men defined as clients by this rule were in fact arrested for patronizing. In arrest data from 7 smaller metropolitan

jurisdictions that included patronizing-specific charges, on average 99% of the men defined as clients by this rule were in fact arrested for patronizing. Together, these results indicate that these definitions have a low “false positive” rate (chapter 2).

We eliminated some of the few men falsely identified as clients in these data (Arizona, Florida, Texas, and some jurisdictions in Washington state) by excluding arrestees if their criminal history showed evidence of male prostitution (homosexuality-related charges or > 3 prostitution arrests). Male/transvestite prostitutes had much higher rates of rearrest than clients (chapter 2). Very few clients had > 3 prostitution arrests in arrest records that included patronizing-specific charges (0.1% in Minneapolis [1990-2001] and Seattle (1951-2004), 0.2% in Indianapolis (1985-2002), 0.6% in the 8 New York state counties with the 5 largest cities [combined; 1970-2002]. Most prostitution charges against those with > 3 arrests were for selling sex. In addition, we excluded from the set of eligible controls those men arrested on both violence and prostitution charges on the same day, to eliminate the possibility that such men had been charged for attacking a prostitute. Furthermore, we defined all men charged in Florida with “using vehicle for transport for prostitution” as clients.

We matched controls to cases according to a 1 case:5 controls ratio. We selected 5 controls randomly from the pool of controls matched to a case by jurisdiction and time period. If a case had victims in multiple jurisdictions, we drew controls from the jurisdiction that included the most of his victims (if controls were not available for that jurisdiction, we drew from the jurisdiction with the next most victims). To be eligible for selection, controls had to have been arrested within 10 years of the case’s attack(s). We used the narrowest symmetrical time period surrounding the case’s attack for

determining eligible controls (defined in +/- whole years from the attack date). Where possible, we sought to have a pool of at least 10 eligible clients from which to draw 5 for matching. If a case had multiple attacks in a jurisdiction, we used his median attack date as the reference date. If that median attack occurred before any control arrests, we used the first subsequent attack that occurred within the control arrest period as the reference date. For a few cases with limited incident information, we defined attack dates as the date of conviction; see chapter 4 for additional information on how we defined attack dates when they were not known exactly. Fifty-nine percent of controls matched within 1 year of the case's (median) attack date (75% within 3 years and 87% within 5 years).

Variables

Table 1 shows the demographic, biometric, geographic, criminal history, and vehicle characteristic variables available by local and state jurisdictions.

Demographics. We measured age in years. For cases with multiple victims, we computed age at the median attack date (to correspond to the basis for case-control matching and to approximate the age of a typical serial perpetrator who has not yet been apprehended). Blacks and whites together made up the vast bulk of cases (89%) and controls (87%). We created two dichotomous variables for black and white race, respectively.

Biometrics. We assessed height (inches), weight (pounds), and body mass index (BMI; $(\text{weight} \times 703) / \text{height}^2$). We also created a dichotomous variable for extreme BMI (< 20 [underweight] or > 35 [severely/morbidly obese]).

Geography. We computed the road distance between a case's residence at the time of the attack and the location where he encountered or picked up his victim ("journey-to-crime" distance). The sources for our information about the encounter location, in order of priority, were witness reports (uncommon), perpetrator statements, reports from others about where the victim was last seen, and reports of where the victim typically worked. When the encounter location was described as a particular "stroll" (area of prostitution along a particular street), we used the median location of prostitute arrests on that street during the period surrounding the attack. When the encounter location was described as a neighborhood, we used the neighborhood's centroid (with neighborhood boundaries defined by local sources). For cases with multiple victims, we computed the mean residence-encounter location distance. There were no data on victim encounter locations for some attacks.

The journey-to-crime distance for controls was the road distance between a client's residence and his arrest location. Arrest records for some jurisdictions included only the city of residence and/or arrest. For controls in these jurisdictions, we estimated the residence and/or arrest location crudely by the address of the jurisdiction's city hall or most major municipal building listed on the jurisdiction's web site.

For all jurisdictions except Texas, we calculated road distances with the shortest-path routines of Network Analyst 1.0b on Census 2000 road coverages (available at http://arcdata.esri.com/data/tiger2000/tiger_download.cfm). We kept computational time to a minimum by performing calculations in degrees UTM (NAD83), the native format of the Census 2000 road data, and converting the result to kilometers using a spherical model for the Earth (program available on request). For Texas cases and

controls and for individuals known to reside far away from the encounter/arrest location (e.g., several states away), we computed distances with the trip distance function at <http://www.mapquest.com>. We considered journey-to-crime distances to be “precise” unless only the city of residence or arrest was known. We also created a dichotomous version of the journey-to-crime distance (< 50 km vs. > 50 km) to approximate the road distance “radius” of a typical large US metropolitan area.

We also measured lifetime geographic mobility by noting whether the attack (for cases) or arrest (for controls) was in the same state in which he was born. Moreover, we assessed how representative the victim encounter locations were of locations where police arrested clients for patronizing in a jurisdiction. We calculated the road distances between each victim encounter location and the locations of client arrests during the temporally closest 6 year period (3 years before and after of incident date, if possible), and noted the shortest such distance for each attack.

Criminal history. We measured cases and controls’ state criminal history for particular offense categories. These criminal history variables refer to offenses committed before a case’s (first) attack or before a control’s patronizing arrest in the state where the attack/patronizing arrest occurred. For some jurisdictions, we received controls’ state criminal histories when we obtained the prostitution arrest records. For other jurisdictions, we used identifying information in the prostitution arrest records to search for controls in state criminal history databases. We also searched for cases’ criminal histories in these state databases. Arizona, Florida, New Mexico, New York, Texas, and Virginia state criminal histories included all recorded arrests, while those for Connecticut, Minnesota, and Washington state included convictions only. We used

arrests as the measure of criminal history for the former set of states, and convictions for the latter set. The state criminal history databases have somewhat varying scopes (e.g., whether misdemeanors included), time depths (e.g., from all arrests/convictions from the past several decades to only the 15 years following completion of a person's last sentence), and structures (e.g., whether all charges or just the top charge from an arrest are included). These aspects of the criminal history data, however, are constant within matched case-control sets.

We created 5 dichotomous, mutually exclusive criminal history variables. By our definition, violent offenses included homicide, assault, domestic violence, robbery, and other offenses involving physical violence or harm against persons. Rape offenses included rape, sexual assault, child molestation, and other crimes involving forced or unwanted direct sexual contact. Sexual offenses included crimes of a sexual nature not involving forced or unwanted sexual contact, such as indecent exposure, lewdness, and pornography-related offenses, among others. Patronizing offenses included patronizing only. Miscellaneous offenses included all other crimes, such as drug offenses, driving while intoxicated, reckless driving, driving without a license, and weapons offenses, among others. We classified all attempted offenses with their completed counterparts. Also, we excluded procedural charges (i.e., those arising from police/judicial intervention) such as resisting arrest, obstructing justice, escape, bail jumping, probation/parole violations, contempt of court, and failure to appear) from all variables, as they are dependent on having had a history of other offenses.

Vehicle characteristics. We matched a separate set of controls to cases with vehicles, given that there were more missing data on arrested clients' vehicles (mostly

due to a small proportion of clients arrested on foot/bicycle or in offstreet settings). All matched controls were arrested within 1 year of cases' (median) attack date. We assessed vehicle age (years) and type of vehicle (passenger car vs. other type of motorized vehicle [pickup truck, other truck, van, sport utility vehicle, or motorcycle]). Three of 17 cases with data on vehicles drove 2 vehicles during the periods of their attacks; the other 14 drove only one vehicle. For each of the 3 cases who drove 2 vehicles, we randomly selected one for analysis.

Assessment of arrested clients' potential for violence

Arrest data from two local police departments—Minneapolis, Minnesota (1990-2001) and Lynnwood, Washington (1996-2003)—allow assessment of the potential for violence between clients and prostitutes. In their reports of patronizing arrests made in the context of stings, officers in both jurisdictions occasionally noted the price of the sex act agreed to by the arrested client and decoy (undercover policewoman posing as a prostitute) and the amount of money on his person, as well as the presence of weapons on his person and in his vehicle. Clients who have less money than the agreed-on price may be more inclined to physically force a prostitute to perform the sex act for little or no money, and/or may be susceptible to a violent reaction from a prostitute.

Statistical analysis

We summarized univariate distributions numerically and graphically, and performed bivariate and multivariate conditional logistic regression analyses. The conditional logistic regressions contrasted cases and controls on each variable and incorporated the matching design in the estimation of associations. We excluded a case and his controls from analysis if any had missing data on a variable. We constructed

multivariate models for subsets of variables that preserved the maximum number of cases. All regression analyses were conducted for all cases (and their controls), cases explicitly known to be clients, prostitute killers, and serial prostitute killers separately. We carried out data management and analysis with Microsoft Access97, Microsoft Excel97, Epi-Info 3.3.2 (<http://www.cdc.gov/epiinfo/>), and custom programs written in FreeBasic (<http://www.freebasic.net>). We produced graphics with DPlot 2.0.4.7 (<http://www.dplot.com>) and Venn Diagram Plotter (<http://ncrr.pnl.gov/software/>).

Results

Summary of cases

We identified 118 cases for whom there were suitable controls. Cases' victim encounter locations were typically very close to patronizing arrest locations (Table 2). Figure 1 shows the temporal distribution of cases' (median) attacks. Although the frequency of prostitute homicide in the US has increased over the last 30 years (chapter 4), the large proportion of cases in the last 10 years in our analyses is mostly an artifact of the greater availability of recent, rather than older, arrest data on controls.

Eight (7%) cases were team perpetrators (committed attacks with another case), 6 (5%) encountered all of their victims in off-street prostitution settings, and 78 (66%) were explicitly known to be clients (for others, the inference was strong). Fifty-six (47%) had multiple victims (fatal and/or nonfatal attacks), 76 (64%) killed at least one victim, and 23 (19%) had both fatal and nonfatal attacks (Figure 2). At least 77 (65%) cases were known to have been convicted. For many of the remainder, prosecutions were still in progress when we collected the data or the case died while in custody before trial; some were never prosecuted, were acquitted, or the court charges were dismissed.

Nonetheless, all attacks were considered cleared by the police. Six (8%) of the convicted cases were reported in media sources as convicted for their attack(s) even though their state criminal histories did not include such convictions.

The median lag between a case's first attack and his arrest on charges for violence against prostitutes was 133 days (range = 0-7,092, 63% \geq 30 days, n = 71). Among prostitute killers, the median lag was 207 days (range = 0-7,092, 72% \geq 30 days, n = 53).

Comparisons between cases and controls

Tables 3 and 4 show the bivariate conditional logistic regression results. Cases and controls were similar in age, but cases were somewhat more likely to be black. The association for black race was of comparable magnitude among serial killers and their controls (29% [10/34] for cases vs. 18% [31/170] for controls, OR = 1.94, 95% CI 0.82-4.61). Cases were approximately one inch taller and 9 pounds heavier than controls on average, but did not differ meaningfully in terms of BMI. However, cases were one-quarter to one-third as likely as controls to be underweight or severely obese (the two cases classified as having extreme BMI had values of 19.967 and 19.996, respectively, just below the threshold of 20). Nearly all cases and controls resided within 50 km of their victim encounter/arrest locations and they had similar journey-to-crime distances on average (median about 10 km among those with "precise" measurements). Almost equal proportions of cases and controls were born in the state of their crimes.

Cases were substantially more likely than controls to have a criminal history of violent, rape, other sexual, and property offenses. Serial prostitute killers were more than three times as likely to have a violent criminal history as their controls (46%

[11/24]) vs. 14% [17/120]), OR = 6.49, 95% CI 2.16-19.52). Very few cases (2%) or controls (4%) had a prior history of patronizing according to the state criminal history databases we searched, and cases were modestly less likely to have a history of other, miscellaneous offenses. However, an additional 6% of cases had a prior history of a patronizing arrest/conviction according to media reports (these could represent arrests/convictions in other states or incidents not recorded in the state databases).

Cases were mildly less likely to drive cars than controls, but their vehicle ages were similar. All bivariate results were very similar in pattern and magnitude for those cases explicitly known to be clients and their controls and serial killers and their controls (data not shown).

Table 5 shows the results for a multivariate conditional logistic regression model for those cases and controls with data on the included variables. No controls in the models had a rape history (precluding the addition of this variable to the model), but 9% (6/65) of cases had a rape history. Most estimates changed little after adjusting for other variables in the model. The only exception is that the *lack* of a criminal history of miscellaneous other offenses shows a much stronger association with client violence in the multivariate than the bivariate context. We also estimated other models involving additional variables. These models involved fewer cases and controls given the pattern of data availability (Table 1) and none showed results that differed notably from the bivariate results in Tables 2 and 3.

Defining suspect search pools

The data suggest there may be means to identify relatively restricted pools of men might include, with a moderate likelihood, perpetrators of violence against prostitutes.

Among all cases with criminal history data, 31% (28/90) had violent and/or rape criminal histories; 40% (24/60) of killers and 47% (14/30) of serial killers had such histories.

Only 1 of 28 cases with a violent or rape criminal history was caught with crucial assistance from prostitutes or was known by prostitutes to be violent. However, several violent clients without a violent or rape criminal history were known by prostitutes to be violent, were caught with their assistance, and/or were caught as a result of prostitution stings or routine police patrols of prostitution strolls. If these other means of identifying suspects are included, the percentages of cases included in the suspect search pool increase to 49% for all violent clients, 48% for killers, and 60% for serial killers. Overall, at least 9% of violent clients were known by prostitutes to be violent, and an additional 5% were caught with critical assistance from prostitutes.

Arrested clients' potential for violence

In Minneapolis, 58 of 2,651 client arrest records noted the price for sex negotiated by the client and decoy and the amount of money on the client's person. Nine of these 58 (16%) clients had less money than the agreed-on price. In Lynnwood, 28 of 127 arrests had information on the price and amount of money held by the client. Four of these 28 (14%) clients had insufficient money. Furthermore, at least 14 (0.5%) additional clients in Minneapolis and 5 (4%) in Lynnwood had weapons (knives, clubs, nunchucks, and/or handguns [typically loaded]) on their person or easily accessed from the vehicle driver's seat.

Discussion

Violent clients usually picked up their victims in the same areas where police arrested clients for patronizing. Cleared violent crimes against prostitutes involved long

periods of time between the perpetrator's (first) attack and his arrest (e.g., a median of almost 7 months for prostitute killers). In a matched case-control analysis comparing violent clients with clients arrested for patronizing in the same jurisdictions and time periods, violent clients and controls were similar in terms of age and distance between their residences and victim encounter/arrest locations. However, violent clients were less likely than controls to be white, be underweight or severely/morbidly obese, and drive cars (as opposed to other types of motorized vehicles). Violent clients were also much more likely to have a criminal history of violent, rape, and property offenses, and substantially less likely to have a criminal history of miscellaneous other (non-violent, non-property, non-sex, non-patronizing) offenses than controls. Men with a criminal history of violent and/or rape offenses comprise a pool that would include 40% of prostitute killers (47% of serial prostitute killers). In addition, meaningful proportions of clients arrested for patronizing in two jurisdictions had less money in their possession than they price they had agreed to pay for sex or carried weapons at the time of arrest, suggesting the potential for violence in clients' interactions with prostitutes.

Anecdotal reports suggest that prostitute women perceive black and young clients as more prone to violence (Miller, 1993; Sanders, 2005; Williamson & Folaron, 2001). In our study, blacks were more likely to be violent than clients of other races, but age was unrelated to client violence (see also (Lowman & Fraser, 1996). Contrary to popular perceptions (Fox & Levin, 1998), whites were somewhat less likely to be serial killers in this setting than men of other races, and this pattern holds for homicide in the US generally (Walsh, 2005). Interestingly, the near absence of any perpetrators who were underweight or severely overweight (despite comparatively more controls

classified as such) suggests that a certain degree of physical strength or agility is required to attack a prostitute. In a sample of prostitute homicides drawn from the files of the Federal Bureau of Investigation's (FBI) National Center for Analysis of Violent Crime (NCAVC), only 11% of victims died from gunshot wounds; the remainder died from attacks involving significant physical force (e.g., strangulation, stabbing) (Dudek, 2001).

Other samples of prostitute killers also indicate the potential utility of violent and rape offense criminal histories for defining suspect search pools. Just as in our sample, 40% (4/10) of prostitute killers in cases filed in prosecuting attorneys' office in 33 urban US counties (Bureau of Justice Statistics, 1996) had a state criminal history of violent and/or sex offenses. Eighty-one percent (56/69) of prostitute killers in the NCAVC sample (Dudek, 2001) had such a history based on national (FBI) arrest records. Proportionally more serial prostitute killers were included by this criminal history criterion in our sample (60%; corresponding coverage in the NCAVC sample = 77%). Men with violent and/or rape offense histories constitute a large pool, even if defined only by a state criminal history database. It might be possible to prioritize suspects in this pool by developing a statistical model that contrasts violent clients from other violent offenders, and integrating the results with other facts from the investigation. Indeed, prostitute killers in our sample appear to differ substantially in terms of demographics and criminal history from other samples of homicide offenders ((Fox & Zawitz, 2004; Langford et al., 2000; Rojek, 2000). In some circumstances, it may even be possible to winnow the search pool defined by criminal history to a manageable number of suspects for

investigation by prioritizing merely on the basis of suspects' residential proximity (or proxies thereof) to the victim's probable encounter location.

Nevertheless, the criminal history criterion incompletely identifies potential suspects. Our results indicate that prostitutes are an important source of intelligence on violent clients, and that perpetrators caught with prostitutes' assistance or known by prostitutes to be violent tended not to have had a violent or rape offense criminal history. Wider and more systematic implementation of programs to collect reports of violent clients from prostitute women (Kinnel, 2004; Kinnell, 2001a; Lowman & Fraser, 1996; Penfold et al., 2004) on an ongoing basis may ultimately provide crucial investigative information.

Disputes between clients and prostitutes over money/drugs and the terms of money-for-sex exchange are some of the common motives in prostitute homicide (chapter 4). Patronizing arrest data from two jurisdictions indicated that about 15% of clients had insufficient money to pay the negotiated price, which may have eventually led to conflict had the interactions involved a real prostitute. Further illustrating the potential for violence in client-prostitute encounters, between 0.5-4% of arrested clients had weapons available at the scene of the arrest. However, most (51%) prostitute homicides in the NCAVC sample were strangulations or suffocations that did not involve firearms, knives, or other traditionally defined weapons (Dudek, 2001), so the presence of weapons may not necessarily indicate increased risk of violence.

Our use of cleared cases of client violence against prostitutes potentially limits our conclusions, as offenders who are caught may differ from offenders who are never apprehended. However, serial prostitute killers may account for 35% or more prostitute

homicides, and some unsolved prostitute homicides may have been committed by arrested perpetrators even though the crimes are never linked to them (chapter 1). We also may have underascertained cases' and some controls' criminal histories because many of our criminal history searches were based names and other identifying information rather than fingerprints (the basis for linking controls to their histories in most of our data). At most, four cases' histories could have been missed, and the direction of bias would be toward underestimating the association between criminal history and client violence. Furthermore, official criminal histories obtained from local, state, and federal agencies in the US are incomplete (Geerken, 1994), but this bias was constant across cases and controls and would not account for the differences between cases and controls observed. Despite these limitations, comparative analyses such as ours will put offender profiling on a firmer scientific foundation and likely contribute to more effective investigations.

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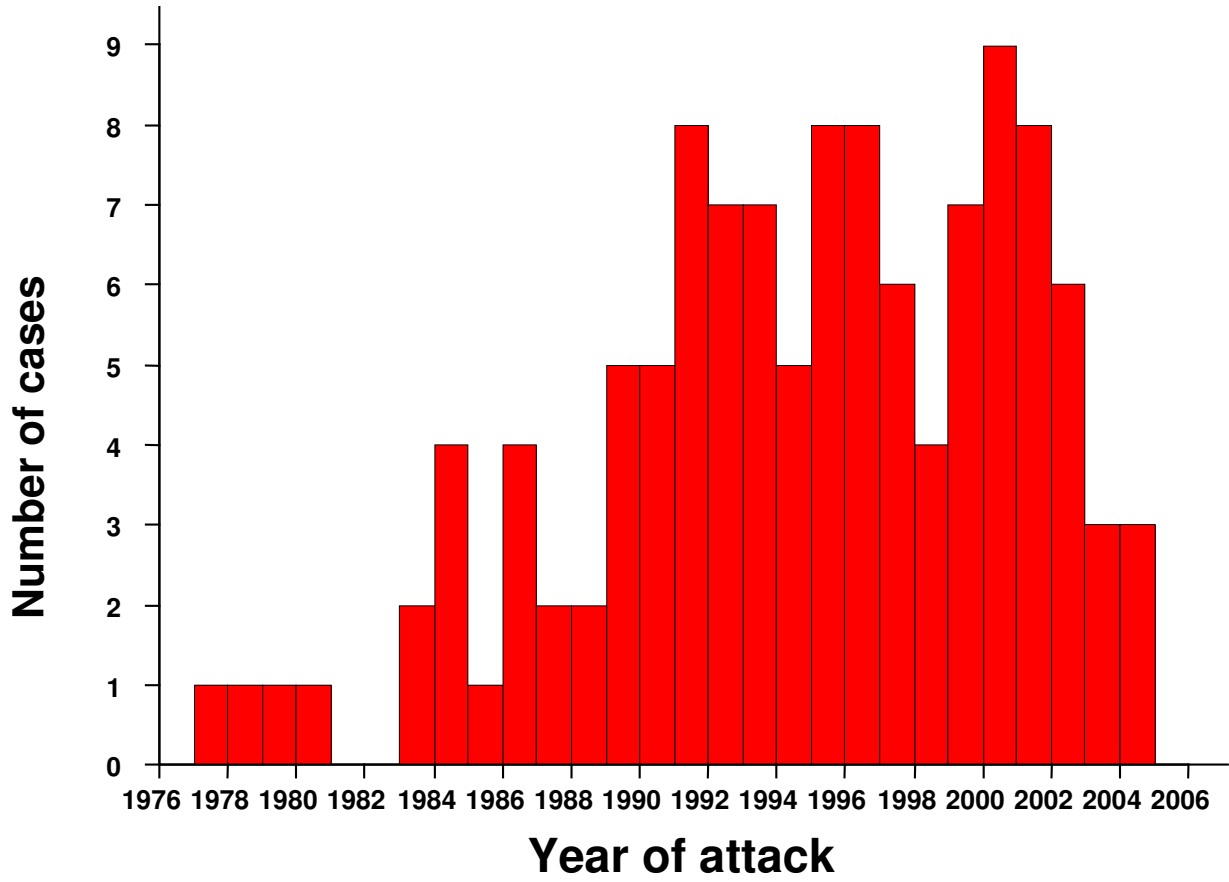
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Figure legends

Figure 1. Number of violent clients (by median attack date) over time

Figure 2. Overlap of violent clients with fatal and nonfatal attacks of prostitute women.



**Perps of fatal
attacks (n = 76)**

**Perps of nonfatal
attacks (n = 65)**

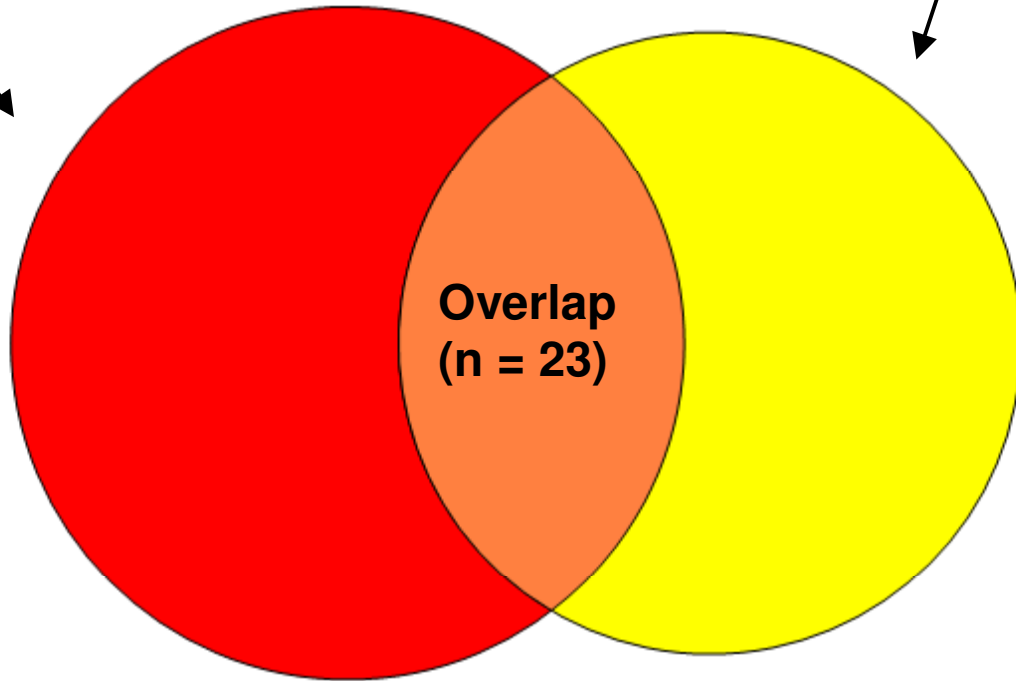


Table 1. Data available for comparing violent clients and clients arrested for patronizing, by jurisdiction

Jurisdiction	N cases	Age	Race	Height/ Weight	Criminal history	Birth state	Journey-to- crime	Vehicle age	Vehicle type
Arizona	3	X	X	X	X				
Connecticut	9	X	X	X	X		X		
Florida	30	X	X	X	X	X			
Kansas City, MO	3	X	X				X		
Minnesota	16	X	X		X		X		X
New Mexico	1	X	X		X				
New York	13	X	X		X				
Portland, OR	15	X	X	X			X	X	X
Texas	11	X	X	X	X ^a	X	X		
Virginia	1	X	X		X ^a		X		
Washington state	16	X	X	X	X	X	X		

^aPatronizing history only.

Table 2. Proximity of cases' victim encounter locations to client patronizing arrest locations in several jurisdictions

Jurisdiction	n incidents	% victim encounter locations:	
		< 0.2 km of closest client arrest location	< 0.5 km of closest client arrest location
Kansas City	3	33	33
Minneapolis	13	92	100
Portland, OR	27	11 ^a	26 ^a
Seatac, WA	5	80	100
Seattle, WA	13	77	92
Yakima, WA	4	100	100

^a74% of the victim encounter locations were within 0.7 km of the closest client arrest location

Table 3. Bivariate comparisons between violent clients (cases) and clients arrested for patronizing (controls) on ratio-scale variables

Variable	Cases		Controls		OR ^a (95% CI)
	N	Mean (SD)	N	Mean (SD)	
All					
Age	117	35.9 (10.8)	585	35.0 (11.3)	1.01 (0.99-1.03)
Height	71	69.7 (3.4)	355	68.8 (3.4)	1.08 (1.00-1.17)
Weight	64	183.3 (34.0)	320	174.4 (32.8)	1.01 (1.00-1.02)
BMI ^b	64	26.3 (3.8)	320	25.8 (4.3)	1.03 (0.97-1.10)
Journey distance ^c	48	10.5	240	10.0	1.00 (1.00-1.01)
Vehicle age	10	10.0 (7.2)	50	8.2 (6.4)	1.04 (0.94-1.15)
Killers					
Age	76	33.9 (10.2)	380	35.0 (11.7)	0.99 (0.97-1.01)
Height	53	69.7 (3.5)	265	68.9 (3.4)	1.08 (0.98-1.18)
Weight	49	181.9 (32.0)	245	174.4 (32.1)	1.01 (1.00-1.02)
BMI ^b	49	26.1 (3.6)	245	25.8 (4.2)	1.02 (0.95-1.10)
Journey distance ^c	19	6.6	95	12.4	1.00 (1.00-1.00)
Vehicle age	7	8.3 (5.2)	35	8.4 (6.3)	1.00 (0.87-1.14)

^aBivariate odds ratio (indicating change in odds per unit of independent variable) from conditional logistic regression, which incorporates case-control matching design.

^bBody mass index.

^cRoad distance between residence and victim encounter location (for cases) or patronizing arrest location (controls) when able to be measured precisely for both cases and controls. These distributions are highly skewed; therefore, this row shows medians only.

Table 4. Bivariate comparisons between violent clients (cases) and clients arrested for patronizing (controls) on nominal-scale variables

Variable	Cases		Controls		OR ^a
	N	% (freq.)	N	% (freq.)	
All					
White race	98	63 (62)	490	69 (339)	0.74 (0.46-1.20)
Black race	98	26 (25)	490	17 (85)	1.69 (1.00-2.88)
Extreme BMI ^b	64	3 (2)	320	9 (28)	0.34 (0.08-1.47)
Journey distance < 50 km	57	89 (54)	285	93 (285)	0.51 (0.20-1.33)
Birth state ^c	29	21 (6)	145	23 (33)	0.89 (0.34-2.32)
Violent criminal history	76	30 (23)	380	15 (56)	2.63 (1.46-4.73)
Rape criminal history	76	8 (6)	380	1 (2)	4.15 (0.27-63.0)
Sexual criminal history ^d	76	4 (3)	380	1 (5)	3.00 (0.72-12.6)
Property criminal history	76	29 (22)	380	15 (56)	2.63 (1.43-4.86)
Patronizing criminal history	88	2 (2)	440	4 (16)	0.61 (0.14-2.74)
Other criminal history	76	18 (14)	380	24 (90)	0.70 (0.36-1.36)
Car ^e	17	53 (9)	85	67 (57)	0.49 (0.15-1.57)

Table 4. Bivariate comparisons between violent clients (cases) and clients arrested for patronizing (controls) on nominal-scale variables (continued)

Variable	Cases		Controls		OR ^a
	N	% (freq.)	N	% (freq.)	
Killers					
White race	68	62 (42)	340	72 (245)	0.59 (0.33-1.05)
Black race	68	32 (22)	340	17 (59)	2.46 (1.33-4.53)
Extreme BMI ^b	49	2 (1)	245	8 (20)	0.25 (0.03-1.84)
Journey distance < 50 km	32	94 (32)	160	94 (160)	1.00 (0.18-5.46)
Birth state ^c	25	24 (6)	125	24 (30)	1.00 (0.37-2.68)
Violent criminal history	49	39 (19)	245	15 (37)	3.83 (1.88-7.79)
Rape criminal history	49	12(6)	245	0.4 (1)	4.93 (0.08-322)
Sexual criminal history ^d	49	6 (3)	245	2 (5)	3.00 (0.72-12.6)
Property criminal history	49	35 (17)	245	16 (39)	3.04 (1.49-6.19)
Patronizing criminal history	60	2 (1)	300	3 (10)	0.48 (0.06-3.92)
Other criminal history	49	18 (9)	245	26 (63)	0.65 (0.30-1.41)
Car ^e	7	57 (4)	35	71 (25)	0.46 (0.07-3.15)

^aBivariate odds ratio from conditional logistic regression, which incorporates matching design.

^bBMI < 20 or > 35 (underweight or severely/morbidly obese)

^cWhether birth state the same as state where victims encounter (cases) or arrested for patronizing (controls).

^dHistory of sexual offenses other than rape or sexual assault.

^eWhether used car (vs. other type of motorized vehicle) when encountering victims (cases) or arrested for patronizing (controls).

Table 5. Multivariate conditional logistic regression results for comparison between violent clients and clients arrested for patronizing

Variable	All (n = 390)		Killers (n = 258)	
	OR	AOR	OR	AOR
Age	1.02 (0.99-1.04)	1.03 (1.00-1.05)	1.00 (0.97-1.03)	1.01 (0.98-1.05)
White race	0.81 (0.44-1.49)	0.74 (0.38-1.47)	0.57 (0.27-1.21)	0.49 (0.21-1.17)
Violent criminal history	3.27 (1.71-6.28)	3.39 (1.52-7.55)	4.43 (2.06-9.52)	5.01 (1.87-13.4)
Sex criminal history	3.75 (0.84-16.8)	2.69 (0.40-17.9)	3.75 (0.84-16.8)	1.53 (0.23-10.2)
Property criminal history	2.80 (1.46-5.38)	2.88 (1.38-6.01)	3.28 (1.53-7.02)	4.05 (1.62-10.1)
Patronizing criminal history	0.40 (0.05-3.17)	0.20 (0.02-1.82)	---	---
Other criminal history	0.80 (0.39-1.66)	0.35 (0.14-0.87)	0.78 (0.35-1.76)	0.22 (0.07-0.67)

Note: The table shows the bivariate, unadjusted odds ratios (OR) and multivariate adjusted odds ratios (AOR), with 95% confidence intervals in parentheses; cases coded as 1, controls as 0. Rape criminal history is not included because no controls had such history, although 9% of cases did; no cases in the killers subset had a patronizing history. The models include data from Arizona, Connecticut, Florida, Minnesota, New Mexico, New York, and Washington state.