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Forensic Science Aspects of Fatal Sexual Assaults on Women

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ABSTRACT: The case files of 41 female victims of proven fatal sexual assault were reviewed. They averaged 42 years of age, but a bimodal age distribution was evident. Younger victims (averaging 31 years of age) were most often found in canals, fields, or vacant lots, whereas older women (averaging 51 years of age) were found most often in their residences. Death usually resulted from mechanical asphyxiation, and the use of firearms was infrequent. Various instruments used to harm, restrain, or kill the victim were most often obtained at the scene of death and reflected the emotionality and impulsivity of the incident. Alcohol was found in the blood of 40% of the victims and averaged 0.14%. Ligature bindings, torn clothing, varying degrees of disrobing, and bite marks were not infrequent. The average yearly incidence of fatal sexual assaults on females is calculated to be 0.14/100 000 population in Dade County, FL and has not changed appreciably since 1959. Thus, death resulting from sexual assault was found to be distinctly unusual. Black victims were represented more frequently than their racial distribution in this community. The scene and autopsy findings of the average female sexual assault victim form a characteristic profile that should direct further investigation on a particular case.

KEY WORDS: criminalistics, criminal sex offenses, demography

Sexual assault is frequently regarded as the sexual expression of hostility [1]. As such, its violent nature may result in death of the victim. To delineate better the injury patterns and demographic features of such sexually expressed hostility, the case records of 41 female victims of fatal involuntary sexual battery were reviewed.

Methods

The homicide records of the Dade County Medical Examiner Department (Miami, FL) were searched for all female victims with proven sexual assault between 1959 and 1981, inclusive. Cases were initially selected when the circumstances of death suggested involuntary sexual battery of any nature. Further selection was based upon evidence of sexual activity as manifested by positive acid phosphatase testing or autopsy findings indicative of sexual bat-

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tery or both. Legitimate sexual activity was excluded by history and circumstances of death in each case. Many cases of sexual assault were suggested but excluded where acid phosphatase results were unavailable or where evidence of sexual trauma was lacking. Altogether, 41 cases were eventually selected for review.

Tests for drugs and alcohol were performed by standard toxicologic methods utilized in this laboratory. Acid phosphatase was assayed by the alpha-naphthylphenylphosphate method and specimens were obtained from the vagina, the oral cavity, and the anal region. Information on the scene of death was obtained by police and, usually, medical examiner scene investigation. Police agencies supplied background data and information about the assailants as well as the circumstances of the assault when known. Complete autopsies were performed on all cases.

Results

The average yearly incidence of proven fatal sexual assaults on females is calculated to be 0.14/100 000 population in Dade County. Comparison of the year intervals 1959 to 1970 and 1971 to 1981 reveals an average yearly incidence of 0.10/100 000 and 0.17/100 000 population, respectively.

The 41 victims were from 10 through 88 years of age and averaged 42 years. The age distribution was bimodal (Fig. 1), with 37% of the victims between 20 and 34 years of age and 24% in the 70- to 84-year age range.

The body habitus of the victims was highly varied but in a Gaussian-like distribution. The heights were between 137 to 173 cm (4 ft, 8 in. to 5 ft, 8 in.); and they were between 35.4 and 97.7 kg (78 and 215 lbs). The height and weight averaged 160 cm (5 ft 3 in.) and 56.8 kg (125 lbs), respectively.

Of the 41 victims, 12 (30%) were black and the remainder were white. The number of black victims was disproportionately high in that nonwhite residents averaged 16% of the Dade County population during the time interval 1959 to 1981 [2,3].

In only two instances were the victims known prostitutes. Two never worked, one sold pencils, and the occupation was unknown in one case. The remainder had the following occupations: housewife (11); student (6); secretary, teacher, or salesperson (11); and "blue-collar" worker (7).

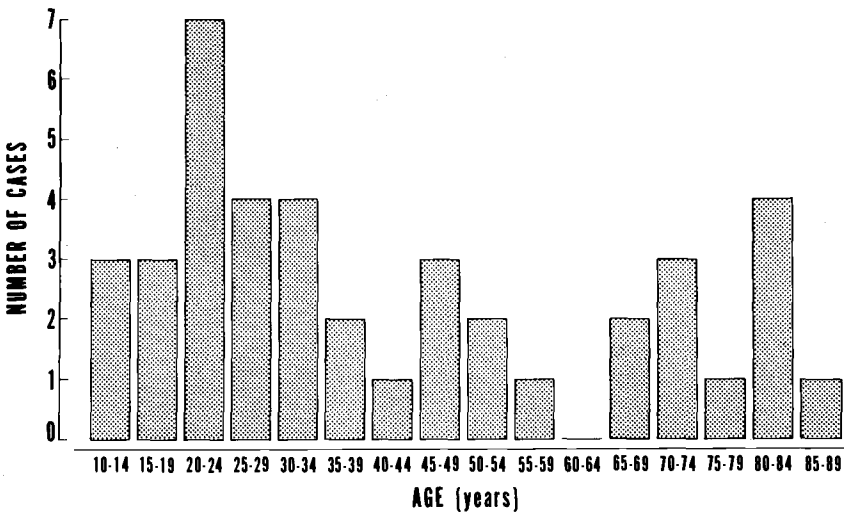


FIG. 1—Age distribution of fatal sexual assaults on females.

The bodies of 13 victims, averaging 31.5 years of age, were found in canals, fields, or vacant lots, whereas the bodies of 22 victims (averaging 51 years of age) were found at home. Four individuals were found in the residence of an acquaintance or a hotel room. In two cases, the location as to where the body was found was not recorded. Clothing in 22 victims was partially removed or torn, and 14 were found nude. In only one case was the clothing intact. The clothing, or lack of it, was not described in four cases. Ten victims (24%) were bound with ligatures in the following manner: hands/forearms in front (2), hands/forearms in back (6), wrists to ankles (1), wrists to bedposts (1), feet to feet (3), and feet to bedposts (1). Five (12%) were gagged.

Acid phosphatase was identified in 20 cases. The vagina was positive in 18 cases, and in seven instances the rectal swab was positive. Elaborate combinations of site involvement were found in many of the victims. Acid phosphatase-positive material was found on the thigh of one victim (with negative results obtained from swabs of vaginal, oral, and rectal/anal areas).

Mechanical asphyxiation, usually manual strangulation, was the actual cause of death (or was significantly contributory) in 51% (see Table 1). Weapons were used on 21 (51%) victims. For purposes of ligature strangulation, items readily available at the scene were utilized (coat hanger, brassiere, garment sash, nylon stockings, or venetian blind cords). Stab or incised wounds to various parts of the body were usually inflicted by kitchen, butcher, or pocket knives. The sharp force injuries were generally of the trunk or neck, but one victim sustained a stab wound to the vulva and another received a stab wound to the vagina. Firearms were used on two victims. One was shot in the head with a .357 Magnum revolver and the other received injuries from both a shotgun and a .38 caliber revolver.

Physical evidence of sexual assault was present in 26 victims. In 25, perineal injuries were limited to the vagina or vulva and, in one, the injury was to the anal/rectal area alone. These included lacerations, abrasions, contusions, and sharp force injuries. Breasts were traumatized in five cases and each was associated with vaginal trauma. Instrumentation caused vaginal lacerations in five victims. The weapons used were: a broken tree branch (two cases), a nightstick, a chair leg, and a flashlight. Burning cigarettes and matches were used to inflict vulvar burns in one person. Bite marks, recorded in three instances, involved the breast, trunk, and the suprapubic areas.

TABLE 1—*Causes of death in 41 fatal sexual assaults on women.*

Causes	Number
MECHANICAL ASPHYXIATION	
Manual strangulation alone	5
Manual strangulation and sharp force injury	2
Manual strangulation and beating	3
Ligature strangulation	7
Ligature strangulation/stabbing/beating	1
Smothering	2
Mechanical asphyxiation (mud) and ethanol intoxication	1
Subtotal	21
OTHER CAUSES OF DEATH	
Sharp force injury (with or without beating)	6
Beating	10
Drowning	2
Gunshot wounds	2
Subtotal	20
Total	41

Ethanol was present in the blood of 15 (40%) of the 37 victims assayed for this. The average concentration was 0.14% (range: 0.01 to 0.29%), and more than half had concentrations of 0.10% or more. One individual out of 24 tested for other drugs had a trace of barbiturates in the blood.

Twenty-two known assailants were responsible for killing 19 of the victims (in three instances there were two assailants for one victim). They averaged 26 years of age and were from 15 to 54 years old. Ten assailants were black, eight were white, and four were not identified by race. Seven assailants knew their victims and, in fact, two were jilted lovers. Seven men had histories of sexual offenses or other crimes including felonies. Two assailants were known to have been intoxicated with alcohol at the time of the assault and both inflicted vaginal trauma by using instruments (tree branch and flashlight). In Table 2, the race of the victim and assailant are tabulated.

Comment

Between 1972 and 1981 approximately 8200 sexual assaults were reported to the Dade County Rape Crisis Center. During the same period, 26 recognized fatal sexual assaults with female victims. It is thus evident that only a small percentage of sexual attacks culminate in death. Also, the overall incidence of recognized fatal sexual assaults in this series has not appreciably increased when the year intervals 1959 to 1970 and 1971 to 1981 are compared.

The victims in this series averaged 160 cm (5 ft, 3 in.) in height which is comparable to the 162 cm (5 ft, 3.6 in.) in height average of the female population in general [4]. This suggests that the victims were selected randomly with respect to their height. However, the victims averaged 56.8 kg (125 lbs), somewhat less than the 65 kg (143 lbs) of the average female population in general [4].

The bimodal age distribution of the victims may indicate both selection and chance on the part of the assailant. The fact that 13 victims, averaging 31.5 years of age, were found in canals, fields, or vacant lots suggests that sexual assault per se was the original objective and possibly a tendency for the assailant (average age of 26 years) to select a victim in his own age range. In contrast, victims found dead at home averaged 51 years of age, suggesting they were more often victims of circumstances, that is, assaulted during a burglary or robbery. More data, however, are needed to confirm this.

The selection of weapons probably reflects the emotionality of the incident as well as what was available at the scene. Most of the weapons used were common to the household or scene of death reflecting the impulsiveness of the act, particularly with regard to vaginal injuries resulting from instrumentation. Mechanical asphyxiation was the major cause of death of the sexual assault victims and reflects the intimate contact between the assailant and the victim as well as the impartiality of the assault.

A blood alcohol concentration averaging 0.14 g/100 g (in those that were positive for alcohol) is quite striking in view of the possibility that some of the victims may in fact have contributed to their own demise in terms of the emotional lability and the lack of judgement

TABLE 2—Race of assailant and victim.

Race of Assailant	Victim	Total
B	W	5
B	B	4
W	W	8
W	B	0
2B	W	3
2W	W	1

that may accompany alcoholic intoxication. The relative inability to escape may also render the victim as an easy target. Similarly, there were two cases in which castrating remarks by the victim culminated in symbolic violence. A tree branch was inserted into the vagina in each instance. In one of these (a prostitute), a penny was placed in the navel as symbolic payment.

The profile of the female victim of a fatal sexual assault is thus one in which death results from mechanical asphyxiation. The weapons and instruments used more often reflect the emotionality and impulsivity of the incident as well as what is readily available at the scene. Younger women (averaging 31 years of age) tend to be found in isolated areas whereas the older women (averaging 51 years of age) are more frequently discovered in their homes. The average victim tended to weigh less than the average adult female. Acute alcoholic intoxication, torn clothing or varying degrees of disrobing, binding with ligatures, and bite marks were also encountered. The general profile should prompt the forensic pathologist to consider involuntary sexual battery whether or not signs of obvious sexual trauma are evident at the scene or the postmortem examination.

References

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