

A Study of Geriatric Forensic Evaluatees: Who Are the Violent Elderly?

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The objective of this study was to examine a sample ($n = 99$) of elderly forensic evaluatees to describe the psychiatric, medical, legal, and demographic characteristics of the sample and to examine which of these factors is associated with violent charges. Clinical data were gathered through retrospective chart review of patients aged 60 and over who were referred for criminal responsibility/competency-to-stand-trial evaluations from 1991 to 1998 at William S. Hall Psychiatric Institute in Columbia, South Carolina. Most (67.7%) of the sample was alcohol dependent, nearly one half (44.4%) had dementia, and close to one third (32.3%) had antisocial personality disorder. The majority of patients (60.6%) were facing violent charges and most (80.8%) were recidivists. In multivariate analysis, race, outpatient treatment status, crime location, and paranoia were all associated with violent charges. The implications and limitations of these data as applied to forensic treatment settings are discussed.

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Considering the pace with which the United States population is aging, surprisingly little is known about geriatric forensic evaluatees. Historically, the percentage of all crimes attributable to the elderly has been low; elderly individuals are less likely to be arrested than are younger individuals for every crime,¹ including felonies.² However, the number of elderly being arrested and incarcerated in jails and prisons has risen over the past 20 years,³ in part related to the increase in the elderly population and in part related to aging among those already incarcerated. For example, Florida tripled its population of inmates older than 55 from 1991 to 2001.³ As the overall population of the United States ages, because of the aging of the post World War II “Baby Boom” generation, issues related to elderly forensic populations are likely to become increasingly important.

Research on elderly offenders and pre-trial populations has been limited. This is probably linked to the fact that the elderly commit far fewer crimes of every type than do their younger counterparts.^{3,4} Ex-

isting studies suggest that the elderly forensic population may have characteristics beyond age that distinguish them from general forensic populations. Specifically, elderly prisoners and evaluatees have, not surprisingly, been found likely to have more physical health problems than have younger inmates including hypertension and cardiac disease.^{5,6} Elderly prisoners are more likely to abuse or be dependent on alcohol than other substances^{3,7–11} and are more likely to be arrested for alcohol-related crime^{3,9} than are their younger counterparts. Existing studies suggest that at least half of elderly prisoners and forensic evaluatees have a diagnosable psychiatric disorder^{10–13} and up to 80 percent of older offenders have had psychiatric hospitalization.¹¹ Common diagnoses include dementia, alcohol abuse/dependence, depression, and personality disorders.^{7,8,10,12–14}

Literature about risk factors for violence in elderly forensic populations is in its infancy. Existing studies from pre-trial forensic psychiatry clinics,^{12,13} prisons,^{3,15} and inpatient psychiatric hospitals¹⁶ suggest that some risk factors for violence in the elderly may be similar to those for younger populations. For example, arrests for violent offense among the elderly have been associated with male gender,^{12,13,16} minority status,¹⁵ low socioeconomic status,^{3,15} and history of past violent offenses.¹⁵ In addition, as with younger defendants, alcohol abuse and dependence and alcohol use at the time of the offense have been linked to violent crime committed by the elder-

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ly.^{3,4,17} Finally, several studies have observed a link between psychotic symptoms, specifically paranoia, and violent crime in elderly forensic and general psychiatric populations.^{13,18–22} Paranoia has been linked to crime against persons, particularly when there is a belief about the victim that is delusional and the victim is accessible.^{16,21,22} This finding is similar to previous findings for non-geriatric psychiatric populations. The link between violent crime and paranoia has been found in at least one study to be more significant than substance use as a risk factor for violence¹⁸ among elderly forensic patients. These findings, while preliminary, are of interest in assessing potential violence in elderly populations. In addition, while research suggests dementia is associated with violent behavior in non-forensic populations,²³ the link between dementia and violent behavior in elderly forensic populations has not been clearly established. To date, no study has examined all of these variables in an effort to test the strength of association of each variable to arrest for a violent offense.

The goal of the study was to assess potential differences between violent and non-violent geriatric forensic evaluatees in relation to their demographic characteristics, legal history, and patterns of alleged offense. We hypothesized that there would be differences in these categories based on whether the index alleged offense was violent. Specifically, we hypothesized that geriatric evaluatees arrested with violent charges would be more likely to have alcohol-related diagnoses, paranoid symptoms at the time of their alleged offenses, and a history of violent charges; to use weapons; and to have a close relationship with their victim. The implications of our data as applied to treatment programs in forensic treatment settings will be discussed.

Materials and Methods

Sample

The study sample consisted of men and women aged 60 and over who were referred to William S. Hall Psychiatric Institute in Columbia, South Carolina, and were seen for criminal responsibility or competency-to-stand-trial evaluations between 1991 and 1998. All were initially seen on an outpatient basis. The sample was drawn from the entire state of South Carolina and represented all cases referred to William S. Hall Psychiatric Institute of people aged 60 and over. Referral to William S. Hall Psychiatric

Institute is not automatic. It occurs when attorneys or judges raise the issue of competency or criminal responsibility. At the time this study was conducted, all competency or criminal responsibility evaluations for the state of South Carolina were referred to William S. Hall Psychiatric Institute. All of the study subjects lived in South Carolina at the time of their alleged offense. The sample does not include all South Carolinians over the age of 60 arrested during this period, only those referred to the forensic hospital for evaluation.

The study was conducted with the full knowledge and approval of William S. Hall Psychiatric Institute's administration and a chart review resulting in a de-identified database was performed in South Carolina. The senior author relocated to the University of Connecticut where continued data analysis was performed. The study was reviewed by the University of Connecticut's Institutional Review Board, with the approval of William S. Hall Psychiatric Institute (i.e., the performance site), and was determined to be exempt from the informed consent process because data were collected and analyzed in an anonymous manner (i.e., the study involved chart review that de-identified subjects).

Data Collection and Coding

Chart review was conducted for each subject. Charts contained at minimum a standard detailed intake form and police report of the alleged offense. Evaluatees were divided into two groups based on whether their alleged offense was violent or not (determination of whether a crime was violent was based on police reports with charges recorded). As defined by the Uniform Crime Reports,²⁴ violent crime consists of the following four offenses: murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault. In the state of South Carolina during the study period, the definition of Criminal Sexual Conduct was broader than the Common Law definition of rape (i.e., unlawful sexual intercourse committed by a man with a woman who is not his wife) or the Uniform Crime Report (UCR) category of forcible rape. Specifically, the South Carolina statute applied to both genders, included a provision for rape by a spouse, and broadened the definition of sexual battery (i.e., included anal sex, oral sex, or penetration of the rectum or vagina with any object). In addition, Criminal Sexual Conduct in South Carolina includes sexual battery with individuals un-

der the age of 16 or who are mentally incapacitated or physically helpless, even if there is no force or coercion involved. In our sample, all of the Criminal Sexual Conduct charges were of the latter type and were therefore coded as non-violent (consistent with the UCR guideline).

Charges for alleged offenses, attempted alleged offenses other than murder or manslaughter, forcible rape (none in our sample), robbery, and aggravated assault were coded as non-violent. Attempts at violent offenses were included in the categories of violent crime, consistent with the Uniform Crime Reports. Some evaluatees were facing multiple charges. Each evaluatee was categorized based on his or her most violent charge. Violent and non-violent groups were compared for demographics, legal history, psychiatric history, psychiatric symptoms at the time of the alleged offense, and characteristics of the alleged offense (e.g., victim, location, weapon, and charges). Symptoms at the time of the alleged offense were determined by chart review, including review of police records.

Data Analysis

Chi-square tests were used for categorical data and one-tailed *t* tests were used for interval data for significance of differences ($p < .05$) between the violent and non-violent groups. Linear regression was performed to assess which variables were most predictive of inclusion in the violent group.

Results

Description of the Sample

A summary of the demographic description of the sample is presented in Table 1. There were 60 (60.6%) individuals arrested for a violent crime and 39 (39.4%) arrested for a non-violent crime. The vast majority (87.9%) of subjects were male, although gender did not differentiate between violent and non-violent subjects. Ages of the 99 subjects ranged from 60 to 82 years with a mean age of 66.8 ± 5.2 years. Age did not differentiate violent versus non-violent evaluatees. About two-thirds of the sample was white (66.7%), and about one-third was black (32.3%). Blacks were more likely than whites to have been arrested for a violent offense ($\chi^2 = 7.24, df = 1, p < .03$). The range of years of education for the sample was 0 to 16, with a mean of 8.0 ± 4.1 years.

Table 1 Demographic Description of Sample

Variable	Overall (<i>n</i> = 99)	%
Age (yr)		
Mean \pm SD	66.8 \pm 5.2	100
Range	60–82	
Gender		
Male	87	87.9
Female	12	12.1
Ethnicity		
White	66	66.7
Black	32	32.3
Other	1	1.0
Education (y)	Mean 8.0 (SE = 4.1) Range: 0–16	100
Employment		
Employed	6	6.1
Retired	43	43.4
Unemployed	49	49.5
Unknown	1	1.0
Marital Status		
Married	27	27.3
Widowed	16	16.2
Divorced/Sep'd	45	45.5
Single	11	11.1
Living situation		
Spouse	23	23.2
Family	17	17.2
Other	11	11.1
Alone	48	48.5

Individuals with lower educational levels were more likely to have been arrested for violent offenses ($t = -2.18, df = 97, p < .03$). Specifically, members of the violent group had received a mean of 7.32 ± 4.00 years of education, whereas members of the non-violent group had received a mean of 9.10 ± 4.01 years of education. Only 6.1 percent of the sample was employed at the time of the offense; 49.5 percent was unemployed, and 43.4 percent was retired. Employment status was not associated with arrest for violent crime. Most of the sample were not married at the time of the offense. Specifically, almost half (45.5%) were divorced or separated and 16.2 percent was widowed. Marital status was not significantly associated with arrest for violent crime. About one-half (48.5%) of the sample lived alone at the time of the alleged offense; of the remainder, 23.2 percent lived with a spouse and 17.2 percent with other family. Living with a spouse was associated with inclusion in the violent group ($\chi^2 = 8.61, df = 3, p < .04$).

Medical History of the Sample

The prevalence of medical problems in the sample is shown in Table 2. The prevalence of neurological

Table 2 Medical History of the Sample

Medical Condition	<i>n</i>	%
Hypertension	34	34.3
Diabetes mellitus	9	9.1
Heart disease	24	24.2
Stroke history	13	13.1
Liver disease	11	11.1
Lung disease	13	13.1
Sexually transmitted disease	7	7.1
History of head injury with loss of consciousness	25	25.3
Cancer diagnosis	12	12.1
Seizure disorder	12	12.1

issues is striking. Specifically, 25.3 percent reported a past head injury with loss of consciousness, 12.1 percent had had seizures, and 13.1 percent had a history of a cerebrovascular accident. No medical diagnosis was associated with inclusion in the violent group.

Legal History of the Sample

Most of the members of the sample (80.8%) had been convicted of at least one prior offense. Of those subjects with prior offenses, almost half of them (43.8%) had been violent. Nine subjects (9.1%) had been convicted of a past homicide and more than one-third of the sample (37.4%) had been convicted of a previous charge related to substance abuse. None of these variables was significantly associated with arrest for current violent crime.

Psychiatric History of the Sample

A summary of psychiatric diagnoses in the sample is provided in Table 3. Only six (6.1%) subjects had neither an Axis I nor Axis II diagnosis. Sixty-eight (68.7%) subjects had more than one psychiatric disorder, and in 62 cases the co-morbidity included alcohol abuse or dependence. The most common diagnoses were alcohol dependence or abuse (67.7%), dementia (44.4%), antisocial personality disorder (32.3%), psychotic disorder (25.2%) [Schizophrenia (14.1%), Schizoaffective Disorder (4.0%), Delusional Disorder (6.1%), Alcohol-induced Psychotic Disorder (1.0%)], drug abuse or dependence (17.1%), and affective disorders (11.1%) [Bipolar Affective Disorder (11.1%), Major Depressive Disorder (6.1%), Dysthymia (2.0%), Mood Disorder Secondary to a Traumatic Brain Injury (1.0%), Alcohol-Induced Mood Disorder (1.0%)]. A history of these illnesses did not differentiate members of the violent group from those of the non-violent group.

Almost one-half (47.5%) of the sample had been psychiatrically hospitalized at least once, 45.5 per-

Table 3 Psychiatric History of the Sample

Diagnosis*	<i>n</i>	%
Alcohol abuse/dependence	67	67.7
Drug abuse/dependence	17	17.1
Dementia	44	44.4
Schizophrenia	14	14.1
Schizoaffective disorder	4	4.0
Delusional disorder	6	6.1
Alcohol-induced psychotic disorder	1	1.0
Bipolar affective disorder	1	1.0
Major depressive disorder	6	6.1
Dysthymia	2	2.0
Mood disorder secondary traumatic brain injury	1	1.0
Alcohol-induced mood disorder	1	1.0
Organic personality changes	4	4.0
Post-traumatic stress disorder	1	1.0
Adjustment disorder or bereavement	4	4.0
Impulse control disorder	1	1.0
Paraphilic disorder	1	1.0
Malingering	1	1.0
Borderline intellectual function	11	11.1
Mental retardation	3	3.0
Antisocial personality disorder	32	32.3
Paranoid personality disorder	1	1.0
Personality disorder not otherwise specified	1	1.0

*Includes comorbid psychiatric disorders.

cent of the sample had been on psychiatric medication, 49.5 percent of the sample had a family history of mental illness, and 19.0 percent of the sample had a history of at least one suicide attempt. None of these variables was associated with inclusion in the violent group. More than one-half (55.6%) of the sample had been in outpatient psychiatric treatment immediately before arrest; those who had been in outpatient treatment at the time of the offense were less likely to face violent charges ($\chi^2 = 11.99$, $df = 1$, $p < .01$).

General Characteristics of the Alleged Offense

A summary of the charges against those in the sample is listed in Table 4. Twenty-six subjects (26.3%) were charged with murder, 2 (2%) with armed robbery, 32 (32.3%), with aggravated assault, and 9 (9.1%) with criminal sexual conduct. None of the criminal sexual conduct charges involved actual force or threat of force; rather, they all involved sexual battery with a minor or mentally defective person. Guns were used in the majority (78.3%) of the violent crimes. Knives were used in two (3.3%) cases. In the remainder of cases, a variety of weapons were used, including scalding water, cars, a hammer, and a lead pipe. The elderly subjects in the sample acted alone in all instances except in one case in which an elderly man broke into a house with the aid of his

Table 4 Specific Charges Faced by Offenders

Charge*	Number (n = 99)	% of Offenders
Murder	26	26.3
Armed robbery	2	2.0
Aggravated assault	32	32.3
Discharging or pointing a firearm	13	13.1
Kidnapping	1	1.0
Possession of a firearm/concealed weapon	4	4.0
Solicitation to commit murder or accessory before the fact	2	2.0
Lewd act on a minor	8	8.1
Criminal sexual conduct	9	9.1
Indecent exposure	1	1.0
Harassment or illegal use of phone/threatening	6	6.1
Arson, primary or secondary	7	7.1
Driving under the influence	4	4.0
Driving under suspension or without a license	2	2.0
Grand larceny or shoplifting	4	4.0
Burglary	1	1.0
Fraud (check and wire)	2	2.0
Drugs (possession or distribution)	3	3.0
Resisting arrest	2	2.0
Disorderly conduct	2	2.0
Contributing to the delinquency of a minor	1	1.0

*Coexisting charges faced by alleged offenders.

son. A minority of subjects (34.3%) confessed to the crime; the violent group was more likely than the non-violent group to confess ($\chi^2 = 7.4, df = 1, p < .02$).

Victims and Location of Alleged Offense

There were more male victims in the sample than female victims (51 versus 38), but women were as likely as men to be victims of a violent offense. The race of the victim was strongly associated with the race of the alleged perpetrator in all arrests in the sample ($\chi^2 = 62.57, df = 1, p < .01$), with blacks being more likely than whites to be victims of violent crime ($\chi^2 = 23.93, df = 1, p < .01$). Victims of all alleged offenses were most likely to be acquaintances (44.2%) and family members (40.7%). Among acquaintances, neighbors were the most common victims. Spouses were the most common family members victimized. Family members were particularly likely to be the victims of violent crimes, while acquaintances were more likely to be the victims of non-violent crimes ($\chi^2 = 27.63, df = 3, p < .01$). Most alleged offenses took place in either the victim's (20.2%) or the alleged offender's (35.4%) home. Violent incidents were more likely than non-violent ones to occur in the alleged perpetrator's home ($\chi^2 = 7.45, df = 2, p < .02$).

Table 5 Model of the Strength of Association of Variables to Inclusion in the Violent Group

Variable	β	t	p	95% CI
Race*	-.20	-2.08	.04	-1.50 to -.03
Outpatient treatment*	-.22	-2.31	.02	-.41 to -.03
Number of years of education	.15	1.59	.12	-.02 to .16
Crime location*	.21	2.22	.03	.06 to 1.14
Family victim	-.05	-.53	.97	-.03 to .02
Confession	-.01	-.04	.97	-.04 to .03
Paranoia*	.23	2.34	.01	.04 to .44

*Significance at $p < .05$ in linear regression.

Symptoms at Time of Alleged Offense

Nearly one-third (28.3%) of the subjects were using alcohol or drugs at the time of the alleged offense. This factor did not distinguish the violent and non-violent groups. Paranoia was present at the time of the alleged offense in 31.3 percent of all cases and was strongly associated with violent charges ($\chi^2 = 7.59, df = 1, p < .01$). Among those who showed paranoid symptoms at the time of their alleged offense, the majority (61.2%) had a primary psychotic disorder such as schizophrenia (29.0%), schizoaffective disorder (12.9%), delusional disorder (16.1%), or alcohol-induced psychotic disorder (3.2%). The remaining subjects showing paranoia at the time of the alleged offense had paranoid symptoms secondary to dementia (22.6%), paranoid personality disorder (3.2%), or depression with psychotic features (12.9%).

Results of Competency-to-stand-trial or Criminal Responsibility Evaluations

About one-third (32.3%) of the subjects were found not competent to stand trial and 10.1 percent were found not criminally responsible. The legal dispositions did not differ between the violent and non-violent groups.

Results of Linear Regression

Standard linear regression was performed to identify which variables were most statistically predictive of inclusion in the violent group. Variables found to differ significantly between the violent and non-violent groups in non-parametric analysis (chi-square and t tests) were entered simultaneously into the linear regression. Results of the regression are shown in Table 5. Geriatric forensic evaluatees were more likely to have violent charges if they were black, had not been in outpatient treatment at the time of

the offense, had committed the alleged offense in their own homes, or were paranoid at the time of the alleged offense.

Discussion

This study confirms that elderly subjects referred for forensic evaluation are a disenfranchised group with socioeconomic, medical, and psychiatric problems. Consistent with previous studies of elderly offenders in prisons and evaluatees referred to forensic clinics, the subjects in our sample were likely to be uneducated, unemployed men with significant legal and psychiatric histories.^{7,8,12-15,25} Those who lived alone were more commonly divorced or separated than widowed. This finding is potentially linked to the dissolution of marriages due to worsening of psychiatric disorders with age, including addiction. Multiple marriages can also be associated with antisocial personality disorder, a prevalent diagnosis among the study population. The subjects in this study were likely to be recidivists consistent with findings from multiple other studies of elderly prisoners and forensic evaluatees.^{8,9,11-13,15} Their legal histories were notable for the high prevalence of past arrests for violent crimes and for crimes related to addiction. Perhaps related to the high prevalence of addiction in the sample, the elderly subjects in our study population were likely to suffer from multiple medical problems including dementia. Previous studies of elderly prisoners and forensic evaluatees have suggested that they are a medically compromised group, with significantly more medical problems than their peers in the community.^{5-6,11,13}

The complexity of medical problems posed by the geriatric forensic population presents a challenge to forensic hospitals and correctional facilities. For example, the high prevalence of neurological disease in the sample may have implications for capacity to understand and participate in decision-making processes related to legal charges, medical care, and placement. Almost 1 in 10 elderly subjects in our study had a sexually transmitted disease, which underscores the importance of not presuming elderly individuals are not at risk for these diseases and of screening all forensic populations for them. The high prevalence of heart disease, stroke, and hypertension suggests medical evaluations should be careful and thorough. A standard evaluation appropriate for the general forensic population may not detect pathology common among older forensic patients or of-

fenders. Specialized evaluations (i.e., one thorough and comprehensive evaluation at arrival versus a cursory clearance examination followed by multiple consults) and housing units may help to streamline health care for the elderly forensic population. The streamlining of care would be likely to result in an ultimate reduction in cost for this population.

Subjects in the study had complex psychopathology with much co-morbidity. This finding is consistent with those of previous investigators, who have shown a high prevalence of psychiatric disorders in populations of elderly offenders and elderly forensic evaluatees.^{6,11-14,17,18,25} Alcohol abuse or dependence were the most prevalent diagnoses in the sample and far exceeded that of elderly populations in the community.²⁶ The high prevalence of alcohol abuse and dependence is consistent with previous studies of geriatric pre-trial detainees evaluated in forensic settings or incarcerated in prisons.^{3,8,11,14,15,25,27} A diagnosis of alcohol abuse or dependence was strongly associated with dementia and with antisocial personality disorder. This finding suggests that there may be two subpopulations of geriatric alcoholics. Specifically, one group may have had onset of antisocial symptoms early in life and then used alcohol. The other group may have had primary alcohol problems without antisocial personality disorder, but may have drunk to the point that they developed dementia from alcohol abuse. This demarcation has potential implications for treatment. While abstinence would be a goal of both treatment arms, cognitive skills and daily living skills would be more critical for the group with dementia. The antisocial group would have a guarded prognosis even if they successfully abstained from alcohol use.

Consistent with previous reports on competency to stand trial among elderly evaluatees, the prevalence of findings of incompetence to stand trial among this population was high (32.1%).²⁸ Incompetence to stand trial was strongly associated with a diagnosis of dementia, as has been noted in previous studies.²⁸ Elderly pre-trial detainees with dementia pose a particularly difficult problem for forensic systems. Dementia is not an easily treatable or reversible diagnosis, making the likelihood of non-restorability higher. This subpopulation of forensic patients poses placement problems. Nursing homes may refuse to admit elderly people accused or convicted of felonies, forensic hospitals may not have treatment units geared to their needs, and communities may be re-

luctant to accept them into group home settings. As the population ages, this problem is likely to become increasingly important.

The results of this study suggest that, consistent with prior findings related to violent behavior, an individual's active symptoms at the time of the alleged offense are likely to be more strongly associated with violence than historical variables such as diagnosis, history of psychiatric hospitalizations, or history of addiction. Specifically, paranoia was the diagnostic variable most strongly associated with violent charges in our sample. Previous studies in forensic and non-forensic geriatric populations have cited paranoia as a symptom associated with violence.^{11,13,16,21,29,30} Imposter beliefs and focus on personal targets have been identified as important subtypes of paranoia.^{21,29} Unlike samples of younger subjects in which most paranoid symptoms are related to a primary psychotic disorder (e.g., schizophrenia, schizoaffective disorder, bipolar affective disorder with psychosis), a significant percentage of paranoid subjects in our sample had dementia with paranoid symptoms. Most of our sample had complex psychopathology, including addiction, and there was much overlap in diagnoses such as addiction, dementia, and antisocial personality disorder. It is therefore not surprising that specific diagnoses were not associated with violence. Our sample probably represents the most impaired of the elderly forensic populations (i.e., those with significant enough mental health concerns to be referred for a forensic evaluation). The finding is interesting, however, in that it underscores the relative importance of active symptoms rather than historical diagnoses in assessing the risk of violence.

The concept that past violent behavior is a strong predictor of future violent behavior has been emphasized in the forensic literature.^{15,29} Our finding that past arrest for violent offenses was not associated with current arrest for an alleged violent offense was therefore surprising. Several possible explanations exist. First, a history of arrest for violent crime is in reality a crude estimate of past violent behavior. Many individuals are violent and for various reasons, not arrested. Other individuals, while arrested for a violent crime, plea bargain the crime down to a lesser charge. We did not have comprehensive data for past violent behavior for our sample, nor did we have records of past charges and pleas versus past convictions. Such data would be interesting to review before conclud-

ing that past violent arrests are not associated with current violent arrests. Of interest, past arrest for a homicide, although present in a small minority of our subjects, approached significant association with arrest for current violent offense. This suggests that there is at least some potential association between past and current violent behavior. A second possible explanation for the lack of association between past arrest for violent behavior and current arrest for violent behavior is that in this sample of geriatric offenders, impulsive violent acts related to worsening dementia were prevalent and were not necessarily predictable from past behavior.

It is no surprise that the use of a gun was strongly associated with violent charges. While gun use is associated with violence among most criminal populations, gun access may be especially important among the elderly. Elderly individuals are often more frail than their younger counterparts and therefore less likely or able to kill or severely injure a victim without the assistance of a weapon (i.e., victim-strength hypothesis). Access to a gun is therefore a critical determinant of lethality of violence in this population. Similarly, availability of the victim is also important. Our elderly subjects were most likely to commit violent acts in their own homes against a family member (particularly a spouse) who lived with them. The combination of weapon within the home, impaired elderly person, and family member living within the home appears to be one with potentially explosive potential. Possible interventions to decrease elderly violence include decreasing access to weapons for the psychiatrically compromised elderly and monitoring interactions in the home and offering support and intervention for spouses of impaired elderly patients. Of note, participation in outpatient psychiatric treatment was unexpectedly negatively associated with violent crime in the sample. This supports the concept that social and psychiatric intervention may lessen the likelihood of extreme violence in this population.

Both race and education were associated with violent charges in this sample. Specifically, subjects were more likely to have been arrested for a violent crime if they were black and had lower educational levels. In multivariate analysis, the association with race, but not educational level, remained significant. Violence has been associated with lower socioeconomic status in several studies involving elderly prisoners.^{3,7-8,11,15} Our sample did not allow us to test

reliably for socioeconomic status (i.e., education is crudely correlated with this variable but is not the same). Further investigation of income levels would be necessary before reaching conclusions related to the findings regarding race and violence in the study. Specifically, if the black subjects were of lower socioeconomic status than the white subjects, it is possible and even likely that the real association is between socioeconomic status and violence rather than race and violence.

An additional limitation of our study was that we did not assess referral patterns for the sample. We do not have data on racial patterns of who was referred for forensic evaluations and who was not referred in the state of South Carolina. It is thus possible that, for example, more black violent alleged offenders were referred and more white violent offenders pled out. If true, this statistic could lead to an artificially high percentage of black offenders in the sample. Studies of race and referral patterns would be fruitful for not only this geriatric population, but for forensic populations in general.

This study, while providing valuable and novel information about geriatric forensic evaluatees, had several limitations. First, it was retrospective, with data gathered via record review. Diagnoses were not made with the use of structured instruments, and variables such as alcohol use were not quantified. Second, the sample comprised people referred for a forensic evaluation. This group may be pre-selected to be more psychiatrically impaired than those not referred or those incarcerated in prisons. Psychotic symptoms, such as paranoia, may be elevated in this population versus the general population of geriatric pre-trial detainees. As previously mentioned, there may be biases in referral patterns based on race or other factors we have not considered. Finally, there is some debate as to what "geriatric" means in the forensic population. This study focused on evaluatees aged 60 years and older; the federal government identifies its "older" population as above 45; some state prisons use the term "geriatric" for individuals over 59; and previously published literature on forensic populations has characterized elderly subjects based on the ages of 45,⁷ 50,^{9,15} 55,^{3,25} 60,^{2,8, 10} 62,^{12,13} and 65.^{1,19} The findings of this study should therefore be viewed as preliminary and not necessarily generalizable to all elderly forensic populations.

This study provides a preliminary examination of a population of elderly forensic evaluatees with specific

emphasis on factors associated with arrest for a violent crime. As the elderly population in the United States increases, it is likely that referrals for forensic evaluations of geriatric pre-trial detainees will as well. An additional increase in the elderly inmate population can also be expected as inmates age while incarcerated. For these reasons, gaining knowledge about the elderly forensic population is important.³¹ Ultimately, such knowledge may enable forensic systems to develop more effective care for the elderly and enable communities to develop strategies to prevent violent crime by the elderly.

References

1. Covey H, Menard S: Trends in arrests among the elderly. *Gerontologist* 27:666–72, 1987
2. Wilbanks W: The elderly offender: relative frequency and pattern of offenses. *Int J Aging Hum Devel* 20:269–81, 1984–1985
3. Arndt S, Turvey C, Flaum M: Older offenders, substance abuse, and treatment. *Am J Geriatr Psychiatry* 10:733–9, 2002
4. Steffensmeier DJ: The invention of the "new" senior citizen criminal: an analysis of the crime trends of elderly males and elderly females, 1964–1984. *Res Aging* 9:281–311, 1987
5. Colsher PL, Wallace RB, Loeffelholz PL, *et al*: Health status of older male prisoners: a comprehensive survey. *Am J Pub Health* 82:881–4, 1992
6. Fazel S, Hope T, O'Donnell I, *et al*: Health of elderly male prisoners: worse than the general population, worse than younger prisoners. *Age Ageing* 30:403–7, 2001
7. Gallagher E: Emotional, social, and physical health characteristics of older men in prison. *Int J Aging Hum Devel* 31:251–65, 1990
8. Kratcoski P: Circumstances surrounding homicides by older offenders. *Crim Just Behav* 17:420–30, 1990
9. Teller F, Howell R: The older prisoner: criminal and psychological characteristics. *Criminology* 18:549–55, 1981
10. Fazel S, Hope T, O'Donnell I, *et al*: Hidden psychiatric morbidity in elderly prisoners. *Br J Psychiatry* 179:535–9, 2001
11. Taylor P, Parrott J: Elderly offenders, a study of age-related factors among custodially remanded prisoners. *Br J Psychiatry* 152:340–6, 1988
12. Rosner R, Wiederlight M, Harmon R, *et al*: Geriatric offenders examined at a forensic psychiatry clinic. *J Forensic Sci* 36:1722–31, 1991
13. Rosner R, Wiederlight M, Schneider M: Geriatric felons examined at a forensic psychiatry clinic. *J Forensic Sci* 30:730–40, 1985
14. Fazel S, Grann M: Older criminals: a descriptive study of psychiatrically examined offenders in Sweden. *Int J Geriatr Psychiatry* 17:907–13, 2002
15. Jennison K: The violent older offender: a research note. *Fed Probation* 50:60–5, 1986
16. Ticehurst S, Ryan M, Hughes F: Homicidal behavior in elderly patients admitted to a psychiatric hospital. *Dementia* 3:86–90, 1992
17. Taylor P: Motives for offending among violent and psychotic men. *Br J Psychiatry* 147:491–8, 1985
18. Nestor P: Neuropsychological and clinical correlates of murder and other forms of extreme violence in a forensic psychiatric population. *J Nerv Ment Dis* 180:418–23, 1992
19. Farragher B, O'Connor A: Forensic psychiatry and elderly people: a retrospective review. *Med Sci Law* 35:269–73, 1995

A Study of Geriatric Forensic Evaluatees

20. Kalunian DA, Binder RL, McNeil DE: Violence by geriatric patients who need psychiatric hospitalization. *J Clin Psychiatry* 51:340–3, 1990
21. Petrie W, Lawson E, Hollender M: Violence in geriatric patients. *JAMA* 248:443–4, 1982
22. Knight B: Geriatric homicide: or the Darby and Joan syndrome. *Geriatr Med* 13:297–300, 1983
23. Gibbons P, Gannon M, Wrigley M: A study of aggression among referrals to a community-based psychiatrist of old age service. *Int J Geriatr Psychiatry* 12:384–8, 1997
24. Federal Bureau of Investigation: Uniform Crime Reports. Washington, DC: FBI, 2001
25. Rayel M: Clinical and demographic characteristics of elderly offenders at a maximum-security forensic hospital. *J Forensic Sci* 45:1193–6, 2000
26. Regier D, Boyd J, Burke J, *et al*: One-month prevalence of mental disorders in the United States. *Arch Gen Psychiatry* 45:977–86, 1988
27. Nestor P, Haycock J, Doiron S, *et al*: Lethal violence and psychosis: a clinical profile. *Bull Am Acad Psychiatry Law* 23:331–41, 1995
28. Freirson RL, Shea S, Shea M: Competence to stand trial evaluations of geriatric defendants. *J Am Acad Psychiatry Law* 30:252–6, 2002
29. Monahan J, Steadman H: *Violence and Mental Disorder*. Chicago: The University of Chicago Press, 1994
30. Taylor P, Gunn J: Violence and psychosis I: risk of violence among psychotic men. *BMJ* 288:1945–9, 1984
31. Tomar R, Treasaden IH, Shak AK: Is there a case for specialist forensic psychiatry services for the elderly? *Int J Geriatr Psychiatry* 20:51–6, 2005