

A Comparison of Female Versus Male Insanity Acquittees in Colorado

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This study was undertaken to investigate the authors' clinical impression that there are significant differences between the male and female insanity acquittees in Colorado, and that these differences result in significantly different treatment needs. The study sample included 149 patients: 112 men and 37 women committed to the Colorado Mental Health Institute at Pueblo as not guilty by reason of insanity (NGRI). Data were collected from a computerized data system and from chart reviews. The study provides descriptive data regarding demographic, legal, and mental health parameters of these acquittees. Demographic items included prior history of incarceration, age at first arrest, type of NGRI crime committed, and severity of NGRI crime. Mental health variables included prior psychiatric hospitalization history of suicide attempts, substance abuse history, inpatient substance abuse treatment history, diagnoses, escape history and length of stay. Percentages of male and female subjects were calculated for those variables with discrete categories. Means and medians were calculated for continuous variables. Results indicate that women are significantly more likely to be given a diagnosis of mood disorder or borderline personality disorder, are significantly older than men at the time of commitment, and are statistically more likely to have committed a single violent crime than men. Men were found to have a significantly higher rate of prior and current substance abuse, a significantly higher rate of antisocial personality disorder, a significantly greater history of violent crime prior to the NGRI offense, and arrests beginning at a significantly younger age than women. Despite the higher severity of crime rating for women, their length of stay was significantly shorter than for men. The implications of the findings with regard to different treatment needs are discussed, and the findings are compared to four other studies addressing female versus male insanity acquittees in other states.

The insanity defense has been a focus of public attention since the acquittal of John Hinckley in 1982. As a result, experts have called for more information about defendants acquitted not guilty by

reason of insanity (NGRI) to formulate a more reasoned and informed approach to legislative, treatment, and public policy decisions.^{1, 2} Although researchers are gradually amassing descriptive data regarding the characteristics of insanity acquittees in general, there has been a relative paucity of information regarding female insanity acquittees in particular, due largely to their small numbers as

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compared with males.²⁻⁴ Previous studies of female versus male insanity acquittees in New York, Oregon, Hawaii, and Connecticut found significant gender differences. Zonana *et al.*² in 1990 specifically called for further research to validate and extend our knowledge of gender differences.

Our interest in this topic resulted from experience treating both male and female insanity acquittees at the Forensic Division of the Colorado Mental Health Institute at Pueblo (CMHIP). Our clinical impression was that there were significant differences between the male and female acquittees, with potentially significant treatment implications. Our attention focused on the female acquittees because they had formerly been distributed throughout the general adult psychiatric wards, but as of July 1989, were all transferred to a newly formed female forensic ward.

Our hypotheses included: (1) the women were less pervasively dangerous than the men and had correspondingly shorter lengths of stay; (2) the women were less likely to have a history of violent crime, to have had previous incarcerations, and to have had arrests beginning at an earlier age; (3) the women were less likely to carry a diagnosis of antisocial personality disorder; (4) the women were more likely to have been involved in a single, lethal crime, and the victim was more likely to be a spouse or child; (5) the women were more likely to be older and married at the time of the insanity acquittal; and (6) the women were more likely to suffer from mood disorders.

This study provides descriptive data re-

garding demographic, legal, and mental health parameters of female versus male insanity acquittees in Colorado. We compare this information with the current body of literature and discuss treatment implications for female versus male insanity acquittees.

Method

Subjects Our study sample included 149 patients, 112 men and 37 women. All subjects had been found NGRI or not guilty by reason of impaired mental condition. We included all such female admissions from January 1978 through December 1988. Due to the large numbers involved, we included only every other male admission during this time period. Each subject was counted only once.

The study period was designed to cover equal periods before and after a statutory change that occurred July 1, 1983. At that time, Colorado moved from an American Law Institute insanity standard, which includes an irresistible impulse clause, to a McNaughten standard. The new Not Guilty by Reason of Insanity law addressed only the capacity to distinguish right from wrong. Simultaneously, the legislature added an acquittal based on diminished capacity to form a culpable mental state, Not Guilty by Reason of Impaired Mental Condition. These statutory changes resulted in a dramatic decrease in the frequency of acquittals based on a primary diagnosis of antisocial personality disorder.

Procedures

Data Collection Data collected on the males were obtained from a comput-

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erized database on each patient in the forensic division. Data on the females, who were new to the forensic division, and for whom a computerized database had not yet been established, were obtained by chart review.

Variables Used in Analysis Demographic variables included date of admission, legal status, date of commitment, race, sex, age, marital status, education and work history. Legal variables included age at first arrest, prior history of incarceration, prior history of violent crime, the type of crime resulting in the current insanity acquittal, and the severity of that crime. The severity of offense was determined using a rating scale developed by the forensic division at CMHIP, with category five being the most severe and category one being the least severe. Clinical variables included diagnoses, prior psychiatric hospitalization, history of suicide attempts, prior inpatient drug or alcohol treatment, length of stay, and number of escapes (if any) during their admission. Length of stay was measured from date of admission to date of conditional release, escape, death or discharge.

Diagnoses were made by the assigned psychiatrist and were based initially on DSM III, and then DSM III-R, Axis I and II. The top three final or current diagnoses were used rather than the diagnosis upon which acquittal was based. For ease of analysis and comparison, diagnoses were then grouped into eight categories. The categories included: (1) primary psychotic disorders, including schizophrenia, schizoaffective, and delusional disorder; (2) mood disorder; (3) antisocial personality disorder; (4) borderline personality

disorder; (5) substance abuse or dependence; (6) all psychotic disorders; (7) psychotic mood disorders; and (8) other disorders. Each patient could be included in several categories.

Data Analysis Percentages of males and females for each discrete variable and means and medians for continuous variables were calculated and then compared using the appropriate test for significance: chi-square, *t* test, or Mann-Whitney *U* test, performed by the Statistical Package for the Social Sciences (SPSS) computer program.

Results

Demographics Overall, there were six times more men than women admitted during the time period covered by the study, with a total of 225 males and 37 females. The mean age of admission for females was significantly older than for males, 35.4 years for women versus 31.0 years for men ($t = 2.11, p < .04$). There were no significant racial differences between males and females. There was a higher percentage of Caucasians (51% of women, 68% of men, 64% total) than any other race. There was a trend for more minority females than males (49% of females, 32% of males; $\chi^2 = 3.279, df = 1, p < .10$). Significantly more women than men were married at the time of the offense or had been previously married (65% of women versus 46% of men; $\chi^2 = 4.16, df = 1, p < .04$). There were no significant differences between males and females in the level of education attained. Most subjects had at least a high school education. Women were found to have held jobs outside the home for a signifi-

cantly shorter period of time than men (54.8% of females held their longest job for less than one year versus 32.2% of males; $\chi^2 = 9.145$, $df = 2$, $p < .02$).

Clinical Variables Significantly more females than males had a history of suicide attempt prior to their index crime (49% of females, 30% of males; $\chi^2 = 7.07$, $df = 1$, $p < .008$). The majority of all subjects had a history of prior psychiatric hospitalizations, with no significant differences between either the presence or number of admissions of males and females. Significantly more males than females had a history of alcohol and/or drug abuse (94% of men versus 55% of women; $\chi^2 = 22.06$, $df = 1$, $p < .001$), and a history of inpatient treatment for chemical dependency (22% of males versus 6% of females; $\chi^2 = 3.96$, $df = 1$, $p < .05$).

Comparing current or final diagnoses, the majority of subjects were diagnosed with a psychotic disorder, without significant gender differences (70% of women, 66% of men, and 67% of the total). The diagnoses in this category included schizophrenia, schizoaffective disorder, delusional disorder, and psychotic mood disorders. Forty-six percent of women, 58 percent of men, and 55 percent of total subjects were diagnosed with either schizophrenia, schizoaffective disorder, or delusional disorder. Psychotic mood disorders were diagnosed significantly more frequently in women (16% of women versus 5% of men; $\chi^2 = 4.43$, $df = 1$, $p < .04$). Women had a significantly greater frequency of diagnosis of mood disorder than men (27% of women versus 12% of men; $\chi^2 = 5.07$, $df = 1$, $p < .03$) and a significantly greater frequency of

diagnosis of borderline personality disorder than men (19% of women versus 5% of men; $\chi^2 = 7.85$, $df = 1$, $p < .01$). Men were diagnosed with antisocial personality disorder significantly more often than women (5% of men versus 3% of women; 1 patient out of 37 females; $\chi^2 = 4.312$, $df = 1$, $p < .04$), as well as with substance abuse and/or dependence significantly more than women (63% of men versus 16% of women; $\chi^2 = 12.444$, $df = 1$, $p < .001$).

We found that women's average length of stay was significantly shorter than men's (1,271.8 days for women versus 1,810.4 for men; $t = 3.14$, $p < .003$).

Legal Variables The majority of subjects did not have a history of prior incarceration or violent crimes. Women were significantly older at the time of first arrest (34.8 years for women versus 22.5 years for men; $t = -5.42$, $p < .001$) and had significantly less history of violent crime than men (11% of women versus 32% of men; $\chi^2 = 6.34$, $df = 1$, $p < .003$). There were no significant differences between women and men by history of incarceration (14% of women versus 21% of men).

The most prevalent index crime was assault, without significant gender differences (28% of men, 19% of women, 26% of the total population). Significantly more females than males had been acquitted of murder (43% of women, 19% of men; $\chi^2 = 8.94$, $df = 1$, $p < .004$) or attempted murder (11% of women versus 0% of men; $\chi^2 = 12.44$, $df = 1$, $p < .001$). Significantly more males than females had been acquitted of sexual assault (18% of men versus 0% of women;

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Table 1
Demographic Comparison

	Study				
	Seig 1992 Colorado	Zonana 1990 Connecticut	Rogers 1983 Oregon	Pasewark 1979 New York	Bogenberger 1987 Hawaii
N	149	337	432	225	107
Male	112	307	384	196	100
Female	37	30	48	29	7
Race	Trend toward more minority females	Proportionately more minority females		Male/female not differentiated	
Marital status	Trend toward more married or ex-married females	More married or ex-married females			Male/female not differentiated
Age on admission	Females older than males	Females older than males	No significant difference	Females older than males	Male/female not differentiated

$\chi^2 = 7.63$, $df = 1$, $p < .007$). There were no other significant gender differences in the type of index crime.

We found that women had been acquitted of significantly more serious crimes than men ($U = 1601.0$, $z = -2.2202$, $p = .026$).

Discussion

It is important to correlate our findings in Colorado with those elsewhere in order to develop a more coherent body of knowledge with regard to female insanity acquittees. We are aware of four other studies that specifically separated female and male insanity acquittees, although there have been many that have included the population of female insanity acquittees in larger study populations. The four studies are Zonana *et al.* in Connecticut in 1990,² Rogers *et al.* in Oregon in 1983,⁴ Pasewark *et al.* in New York in 1979,⁵ and Bogenberger *et al.* in Hawaii in 1987.⁶ Rogers *et al.*⁴ had the largest num-

ber of subjects, with 432 males and 48 females. Our study had the highest percentage of females (16%). (See Tables 1 through 4 for a detailed comparison of these studies.)

We confirmed our hypothesis that women were significantly older at the time of admission in Colorado, as they were in Connecticut² and New York.⁵ Rogers⁴ in Oregon found no significant difference in this variable. Bogenberger⁶ in Hawaii did not address age.

Consistent with research emphasizing the relational development of women,⁷⁻¹⁰ our study confirmed the hypothesis that women were more likely to be married or to have been previously married at the time of their insanity acquittal than men. Although our hypothesis that women more frequently victimized spouses or children is consistent with this same theoretical base, we did not have data to assess the victims' identities. This issue warrants further study. Our

Table 2
Criminal History Comparison

	Study				
	Seig	Zonana	Rogers	Pasewark	Bogenberger
Age at first arrest	Females older than males				
Violent crime history	Males > females			Males/females not differentiated (31% total)	
	(32%)	(11%)			
Prior arrests		Males > females (64.5% (32%))		Males > females (48%) (17%)	
Incarceration history	Males > females (21%) (14%)			Males > females (60%) (24%)	

finding that women's average age at first arrest approximated their age on admission gives support to our hypothesis that women were more likely to be involved in a single, lethal crime.

In Colorado, the women had significantly less history of prior violent crime. We did not find any significant differences in incarceration history. Other studies did not specifically address prior violent crime, and noted prior arrest history

rather than incarceration history.^{2, 4-6} Our study did not find differences in frequency of prior psychiatric hospitalization, but did find significant differences in substance abuse history among men and women.

A major difference in our study as compared with previous studies is the inclusion of three diagnoses for each subject; other studies included only one. Consequently, our study gives a more

Table 3
Index Crime Comparison

	Study ^a									
	Seig		Zonana		Rogers		Pasewark		Bogenberger	
	F	M	F	M	F	M	F	M	F/M	
Murder	43%	19%	0%	26%	0%	1.6%	82.7%	49%	Not differentiated	
Attempted murder	11	0	0	10	4.2	3.9	—	—		
Homicide spectrum	54	19	35	45	15.2	6.8	89.6	54.6		
Assault	19	28	35	13	18	16	0	16.3		
Manslaughter			35	6	10	1.3	6.9	5.6		
Sexual assault	0	18	0	10	7	10	0	5.2		
Arson	11	7	10	10	14	6	6.9	6.1		
Robbery	3	5	0	19	0	9	3.4	7.6		
Other	14	22	20	6	27	48	0	9		

^aF indicates female; M, male.

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complete picture of the mental illness present in this population, including substance abuse and dependence and personality disorders.

Our finding that females were diagnosed significantly more often with mood disorders is consistent with the findings of Zonana² and NIMH epidemiologic catchment area studies,¹¹ which found that females were twice as likely as males to suffer from mood disorders. We found a higher percentage of mood disorders than did any of the other four studies. This may reflect the inclusion of more than one diagnosis in our study, differences in diagnostic training, or differences in utilization of the insanity plea by the states studied.

Substance abuse diagnoses were more frequent in men than women in the Colorado, Connecticut, and New York studies.^{2, 5} This is again consistent with NIMH epidemiologic catchment area studies.¹¹ Our study found a much higher percentage of subjects with substance disorders than the other four studies; again, these higher rates likely reflect our inclusion of three diagnoses.

We confirmed our hypothesis that men are more likely to be diagnosed with antisocial personality disorder. In addition, we learned that female insanity acquittes were more likely to carry a diagnosis of

borderline personality disorder. These findings are consistent with gender prevalence in community samples.¹²

The studies conflict regarding severity of index crimes resulting in the insanity commitment. In Colorado, we found that women's crimes were significantly more serious than men's. Rogers⁴ found that women and men were about equal in severity of their index crimes, with women congregating at both ends of the spectrum, averaging to a moderate severity. Colorado, Oregon,⁴ and New York⁵ all report higher percentages of homicide spectrum crimes (murder, attempted murder, and manslaughter) in females versus males. Connecticut differed, with a greater frequency of homicide spectrum crimes in the male population.²

These differences may reflect differing legal practices between states. For example, it may be that women charged with assault in Connecticut would instead be charged with attempted murder in Colorado, Oregon, and New York. Perhaps in Colorado the insanity defense is not pursued for women with less serious crimes because of the difficulty of obtaining an insanity verdict or the perception of longer lengths of stay in the hospital than in prison. Interestingly, Colorado was the only state of the five being compared that had a McNaughten-type insanity statute

Table 4
Length-of-Stay Comparison

	Seig	Zonana	Rogers	Pasewark
Females	1,275 days	240 days (white) 590 days (nonwhite)	270 days	246 days (murder) 62 days (robbery)
Males	1,810 days	723 days (white) 610 days (nonwhite)	420 days	278 days (murder) 105 days (robbery)

in effect during the time period of the study, for 5 of the 10 years studied. The others had American Law Institute-type statutes, as did Colorado during the last five years of the study. Theoretically, an insanity verdict should therefore have been somewhat harder to obtain in Colorado.

Our study confirmed that in Colorado women's average length of stay in the hospital was significantly shorter than men's. This finding agreed with all other studies noted above.^{2, 4-6} Despite this agreement, our length of stay finding was on average three years longer than that of the other studies. This may be due to different definitions of this parameter or more stringent criteria for release in Colorado. For example, in Zonana *et al.*,² length of stay was measured from the date of NGRI finding to the date of release into the community, while in our study it was measured from the date of admission to the date of conditional release. In Colorado, it is not uncommon for NGRI patients to live in the community for one to two years before conditional release. Information regarding the definition of this parameter was not available for other studies.

We originally hypothesized that women were less pervasively dangerous than men. The literature addressing future dangerousness differentiates between inpatient and community-based dangerous behavior.^{13, 14} Many studies suggest that women may be equally^{13, 15} or more^{16, 17} dangerous in inpatient units than men. Community-based studies consistently point to greater danger manifested by men than by women.¹⁸⁻²⁰

The consistency of the findings in Colorado, Connecticut, Oregon, New York, and Hawaii suggest that women are indeed perceived as less pervasively dangerous than men. Assessment of actual danger potential is a more complicated endeavor. Factors available for our review that are purportedly associated with future community-based danger include: current age,²¹⁻²⁴ arrests or convictions for violent crime,^{13, 25-28, 29} extent of prior criminal history,^{21, 30-32} age at first arrest,^{25, 31, 32} substance abuse diagnosis,^{18, 30, 33} prior psychiatric hospitalizations,³³ and sexual assault criminal history.²¹ Although our study demonstrated that women were more likely than men to be acquitted of the violent crime of murder, most other predictors of future dangerousness addressed by our study were found less frequently within the female population. Our findings were generally consistent with the findings of the other studies. In summary, although Zonana *et al.*² found that gender had very little independent effect on recidivism, these findings regarding risk factors associated with future dangerous behavior strongly suggest that women insanity acquittees, as a group, are less dangerous in the community than men.

The differences we found in diagnostic frequency and in potential for future dangerousness suggest differing treatment needs for female versus male insanity acquittees. With regard to Axis I diagnoses, our data suggest a need for psychoeducational programs for women emphasizing relapse signs and symptoms, prognosis, and medication treatments for mood disorders. Axis II differences suggest a need

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for treatment approaches for women designed to increase self-management of intense, labile emotion, interpersonal conflict, and identity confusion. The less extensive criminal history and lower potential for repetitive violence suggest that treatment may safely take place in relatively low security settings.

This is not to say that the preferred treatments for men and women insanity acquittees have nothing in common; obviously they do, and may even complement each other. Recently, much of the treatment of male and female insanity acquittees in Colorado has been integrated. It has been our impression that this generally has been beneficial to both men and women. The men have become somewhat less resistant to expressing and working with their emotions. The women's patterns of relating to men and to each other have become more apparent and more accessible to treatment interventions.

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