

Relationships between Legal and Clinical Factors among Forensic Hospital Patients

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Recognizing that established relationships enhance understanding and therefore improve clinical intuition and inference, the authors examined clinical and legal characteristics of a legally and clinically heterogeneous population of maximum security forensic hospital patients (n = 380). Several findings serve to substantiate outcomes of previous studies of subgroups of offenders. Some new relationships among legal and clinical variables are established. The relationship between admission legal status and Axis I diagnosis is dependent upon the Axis II diagnosis. Those admitted for competency evaluations have the lowest percentage of psychotic diagnoses and the highest IQ. Kidnapers have the highest percentage of psychotic diagnoses and there is a relationship between previous incarceration and drug treatment refusal. The authors discuss clinical implications, generalizability, and the needs for further investigation.

The authors' study of clinical characteristics of maximum security forensic hospital patients who refuse drug treatment served to establish an improved understanding of various patient behaviors and their interrelationships.¹ The effect that knowledge derived from established clinical relationships has on predictability, clinical intuition, improved treatment and possibly prevention generates curiosity about what clinical benefits may result from discovery of new link-

ages between clinical and legal characteristics of this population. The literature reflects a number of comparisons of clinical variables between patient groups admitted voluntarily and those committed involuntarily.²⁻⁹ Although preadmission dangerousness and violent behaviors after admission and/or seclusion and restraints were considerations in these studies, all involuntary admissions in these studies were the result of civil, not criminal, commitment procedures. Studies of clinical variables in the criminally committed or detained patient population are limited to subgroups defined primarily by single offense or legal categories such as arson,¹⁰ homicide^{11,12} sexual offenses,^{13,14} or incompetency to stand trial.^{15,16} Relationships between the possible influences of

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previous incarceration, the nature of the criminal charge and admission legal status, on the one hand, and clinical variables such as diagnostic category, drug treatment compliance, substance abuse history and length of hospitalization, on the other, are not reported for a legally and clinically heterogeneous forensic hospital patient population.

This article reports a study, derived from records of a population of maximum security forensic hospital patients, of the relationships between various legal and clinical factors. The null hypotheses tested consider (1) whether a patient has been previously incarcerated or not, (2) the category of legal charge, and (3) the admission legal status (ALS) to be independent of each of the multiple clinical variables studied. Furthermore, the null hypotheses specifying equality of medians for length of hospitalization (LOH), age, education, and IQ across levels of each of these three legal variables are tested.

Methods

This study was conducted in a 110-bed maximum security forensic hospital to which all admissions are involuntary, most through a criminal commitment process. The majority of patients are admitted for treatment as incompetent to stand trial, not guilty by reason of insanity, or as mentally ill, dangerous, and in need of maximum security treatment (civil commitment). Considerably fewer admissions are for evaluation for competency to stand trial or for criminal responsibility. This study included 380

patients who were admitted and discharged between June, 1980, and February, 1984. Nine patients were excluded because of death, escape or lack of sufficient information. Patients assigned to the dual diagnosis mentally retarded/mentally ill ward were also excluded, as were patients with repeat admissions.

The study sample was examined with regard to the following legal variables: (1) whether or not there was a previous incarceration; (2) whether the current charge was a felony or misdemeanor; and (3) admission legal status (ALS), i.e., (a) incompetent to stand trial (IST), (b) evaluation of competency, (c) sanity determination, (d) not guilty by reason of insanity (NGRI), and (e) civil commitment. The small number of patients admitted for sanity determination prevented inclusion of this variable in statistical determinations. Table 1 summarizes the descriptive statistics for the legal variables. Specific criminal charges were grouped into eight categories to facilitate further statistical analyses: homicide, assault and menacing, kidnapping and coercion, sexual offenses, arson-related charges, burglary offenses, possession of weapons/criminal tools, and miscellaneous charges.

The clinical variables studied include: (1) whether medication was refused; (2) whether medication was received; (3) whether receipt of medication was involuntary; (4) whether physical restraints (wrist-waist or seclusion) were used; (5) LOH; (6) Axis I diagnosis (psychotic or nonpsychotic); (7) Axis II diagnosis (personality disorder or no per-

Table 1
Legal Factors

Variables	Levels	Count	Percent
Previous incarceration	Yes	254	66.8
	No	126	33.2
Charge	Felony	272	71.6
	Misdemeanor	86	22.6
	Other	22	5.8
Admission legal status	Incompetency to stand trial	188	49.5
	Evaluation for competency	52	13.7
	Not guilty by reason of insanity	60	15.8
	Civil commitment	58	15.3
	Sanity determination	7	1.8
	Other	15	3.9

sonality disorder); (8) whether there was a history of drug and/or alcohol abuse; and (9) race (white or black).

Refusers are defined as patients who persist in their nonacceptance of prescribed medication for at least one week at any time during their hospitalization. In cases of dangerous behavior, the need for involuntary medication may have shortened the duration of refusal. Patients who required involuntary treatment with medication were those refusers who, because of their behavior, posed an imminent, serious physical threat to themselves or others. The group of patients who received medication voluntarily were those who initially complied with prescribed drug treatment and those few who would have been treated involuntarily had they not changed their minds about noncompliance. The group who received no medication was comprised of those for whom no medication was clinically indicated and those who refused but were not considered imminently dangerous. Physical restraints in

this hospital take two forms: (1) wrist-to-waist restraints by way of leather cuffs; and (2) seclusion, which usually involves two-, three- or four-point limb restraint to a stationary bed.

Diagnoses were established on the basis of interviews and, when available, the results of psychological tests. Availability of the latter was determined primarily by patient cooperation and concentration factors. If intelligence, which was assessed by the Ammons Quick Test, was particularly low or otherwise questionable, the Wexler Adult Intelligence Scale was used in follow-up. The diagnoses used in the analysis were those established at the time of discharge. Axis I diagnoses were divided into psychotic and nonpsychotic groups. The DSM-III diagnostic codes included in the psychotic group were 295 (schizophrenic disorders), 296 (affective disorders), 297 (paranoid disorders), and 298 (brief reactive psychosis and atypical psychosis). The nonpsychotic group included DSM-III codes 290–294 (organic mental dis-

orders and organic brain syndromes), 300 (anxiety disorders), 302 (psychosexual disorders), 309 (adjustment disorders), 310 (organic personality syndrome), and 312 (disorders of impulse control). The few diagnoses of substance use disorder or mental retardation listed as diagnoses on Axis I were reassigned to separate data categories of "drug abuse," "alcohol abuse," and "IQ." In addition to information from diagnostic formulations, charted histories of drug and alcohol abuse were included. Axis II diagnoses were divided into two categories: personality disorders and no personality disorders. All DSM-III 301 codes were included in the "per-

sonality disorder" category. DSM-III codes V71.09 (no diagnosis on Axis II) and 779.90 (diagnosis deferred on Axis II) were included in the "no personality disorder" category. Descriptive statistics for the discrete and continuous clinical variables are displayed in Table 2.

The statistical procedures used are the chi-square test of independence, log-linear model analysis and, for comparisons of the continuous variables, the Kruskal-Wallis Test. All computations were carried out on the Wright State University IBM 3083E Computer using the Statistical Analysis System (SAS) and Biomedical Package (BMDP) statistical software packages.

Table 2
Clinical Factors

Clinical factors that are discrete:					
Variable	Levels	Count	Percent		
Refusal	Yes	127	33.4		
	No	253	66.6		
Medication received	Yes	249	65.5		
	No	131	34.5		
Medicated involuntarily (refusers only)	Yes	61	48.0		
	No	66	52.0		
Restrained	Yes	143	37.6		
	No	237	62.4		
Axis I diagnosis	Psychotic	275	72.4		
	Not psychotic	105	27.6		
Axis II diagnosis	Personality disorder	223	58.7		
	No personality disorder	157	41.3		
Drug abuse	Yes	199	52.4		
	No	181	47.6		
Alcohol abuse	Yes	212	55.8		
	No	168	44.2		
Race	Caucasian	182	48.0		
	Black	197	52.0		
Clinical variables that are continuous:					
Variable	Mean	Median	Minimum	Maximum	Standard Deviation
LOH (days)	152.6	90	5	934	163.4
Age (years)	31.7	29	18	64	10.1
Education (years)	10.7	11	0	21	2.8
IQ	88.1	89	50	119	12.0

Results

In the following discussion the relationships between each of the three legal factors (previous incarceration, criminal charge and admission legal status, respectively) and the clinical and socioeconomic variables are presented. In each instance in which a statistical result is presented, the corresponding test statistic value, the degree of freedom (where pertinent) and the p -value are included.

Previous Incarceration There is a significant relationship between whether a patient has been previously incarcerated or not and substance abuse (drug and alcohol). Specifically, the percentage of drug abusers is higher among patients who have been previously incarcerated (60.2%) than among patients who have no previous incarcerations (36.5%); $X^2 = 19.01$, $df = 1$, $p < 0.001$. Similarly, the alcohol abuse rate among those who have been previously incarcerated (63.4%) is higher than among those with no previous incarceration (40.5%); $X^2 = 17.92$, $df = 1$, $p < 0.001$.

There is a marginally significant relationship between previous incarceration and medication refusal. The refusal rate among those who have been previously

incarcerated (36.6%) is higher than among those who have no previous incarcerations (27.0%); $X^2 = 3.51$, $df = 1$, $p = 0.061$.

In terms of socioeconomic variables, the median IQ, median number of years of education, and median age do not differ significantly between those who have been previously incarcerated and those who have not been previously incarcerated $|z| < 0.82$, $p > 0.413$. The proportion of blacks does not differ significantly between those who have been previously incarcerated and those who have not been previously incarcerated ($X^2 = 1.44$, $df = 1$, $p = 0.231$); namely, 51.8 percent in each group.

Criminal Charge The LOH has a significant relationship with the kind of charge (felony or misdemeanor): the median LOH for felons (97.5 days) is higher than for those charged with a misdemeanor (71 days); $X^2 = 6.64$, $df = 1$, $p = 0.01$. In terms of descriptive statistics, the median LOH (from largest to smallest) for individuals in each of the eight categories of charges is displayed in Table 3. The overall median LOH is 90 days.

The type of charge is significantly re-

Table 3
Lengths of Forensic Hospitalization for Categories of Legal Charges*

Type of Charge	Count	Median LOH†
Sexual Offenses	23	129
Homicide	46	120
Assault and Menacing	73	104
Burglary Offenses	113	89
Kidnapping and Coercion	12	85.5
Arson and Related Charges	34	83.5
Miscellaneous	50	81.5
Possession of Weapons/Criminal Tools	22	77.5

* $N = 373$.

† In days.

lated to the Axis I diagnostic group ($X^2 = 17.622$, $df = 7$, $p = 0.014$), as well as to the Axis II diagnostic group ($X^2 = 16.901$, $df = 7$, $p = 0.018$). Table 4 summarizes the descriptive statistics.

Note from these sample proportions that the highest proportion of individuals diagnosed as psychotic occurs among those charged with kidnaping/coercion (11 of the 12, or 91.7%) and assault (82.2%); the lowest occurs among those charged with sexual offenses (43.5%) and arson (61.8%). The overall proportion of individuals diagnosed as psychotic is 72.4 percent. Also, the groups with the highest proportion of diagnosed personality disorders are arson (76.5%) and sexual offenses (73.9%); the lowest proportion of diagnosed personality disorders corresponds to miscellaneous (46.0%) and possession of weapons (31.8%). The overall proportion of diagnosed personality disorders is 58.7 percent.

With respect to the socioeconomic variables, the median IQ and median age do not differ between those charged with a felony and those charged with a

misdemeanor; $X^2 < 0.01$, $df = 1$, $p > 0.9147$. However, the median number of years of education is significantly higher for those charged with a misdemeanor (12 years) than for those charged with a felony (11 years); $X^2 = 5.35$; $df = 1$, $p = 0.0208$. The proportion of blacks does not differ significantly between those charged with a felony and those charged with a misdemeanor ($X^2 = 0.028$, $df = 1$, $p = 0.867$); namely, 51.4 percent in each group.

ALS There are significant relationships between ALS and three clinical factors: refusal, LOH and Axis I diagnosis. The refusal rate for civil admissions is significantly higher than the refusal rates for the other three ALS categories; $X^2 = 7.86$, $df = 3$, $p = 0.049$. The observed refusal rates for civil, evaluation, NGRI and IST admissions are, respectively, 48.3 percent, 25.0 percent, 31.7 percent, and 31.4 percent.

The median LOH for civil and NGRI admissions is significantly higher than the median LOH for evaluation and IST admissions; $X^2 = 48.04$, $df = 3$, $p = 0.0001$. The median LOH for civil, eval-

Table 4
Type of Charge and Diagnostic Groups

Type of Charge	Count	% Diagnosed as Psychotic	% Diagnosed as having a Personality Disorder
Arson and related charges	34	61.8	76.5
Assault and menacing	73	82.2	57.5
Burglary offenses	113	70.8	61.1
Homicide	46	73.9	60.9
Kidnapping and coercion	12	91.7	58.3
Miscellaneous	50	72.0	46.0
Possession of weapons/criminal tools	22	77.3	31.8
Sexual offenses	50	43.5	73.9

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uation, NGRI, and IST admissions are, respectively (in days), 160, 36, 136.5, and 89.

There is a significant relationship between ALS and whether a patient is diagnosed as being psychotic or not; $X^2 = 27.71$, $df = 3$, $p < 0.001$. The nature of that relationship, however, is different for those diagnosed as having a personality disorder from those not so diagnosed. For those having a *personality disorder*, the observed proportions of individuals diagnosed as psychotic for civil, evaluation, NGRI and IST admissions are, respectively, 82.8 percent, 45.7 percent, 78.8 percent, and 62.9 percent. For those *without a personality disorder*, the corresponding proportions of individuals diagnosed as psychotic are 79.3 percent, 47.1 percent, 100 percent, and 86.1 percent.

The proportions in the latter two ALS categories (NGRI and IST) are significantly higher among those not having a diagnosed personality disorder than among those who have a diagnosed personality disorder; $X^2 = 17.84$, $df = 1$, $p < 0.001$. In both groups of patients (diagnosed personality disorder and no diagnosed personality disorder), the smallest proportion of individuals diagnosed as psychotic occurs among admissions for competency evaluation—a significantly smaller proportion than for the other ALS categories; $X^2 = 20.86$, $df = 1$, $p < 0.001$.

With regard to socioeconomic variables, the median number of years of education does not differ significantly among the four levels of ALS; $X^2 = 1.86$, $df = 3$, $p = 0.6017$. However, the median

IQ is significantly higher for those admitted for competency evaluation than for those admitted in the other three categories; $X^2 = 9.54$, $df = 3$, $p = 0.023$. The median age for civil and NGRI ALS is significantly higher than for the other two ALS categories; $X^2 = 16.13$, $df = 3$, $p = 0.001$.

Discussion

Although beyond the scope of this study, investigation of the influences of factors such as type of offense and/or diagnosis on the process that selects patients for admission to a maximum security forensic hospital would be of interest. Statistical analyses of the data in this study demonstrate many significant relationships between legal and clinical factors as summarized in Figure 1. Because comprehensive studies of various clinical and legal factors in a single forensic hospital patient population are unavailable for comparison, results can be evaluated only in the context of data from a limited number of studies of forensic patient subgroups.

Patients in this study who had been previously incarcerated differed from those not previously incarcerated in that they were significantly more likely to abuse drugs, abuse alcohol, and refuse medication. The high prevalence of drug and alcohol abuse in the criminal population is well documented,¹⁷ especially among individuals with diagnoses of antisocial personality disorder.¹⁸ Burglary offenses, a legal charge occurring with otherwise unexplained frequency in this study sample, are associated with drug abuse.^{19,20} The strong association be-

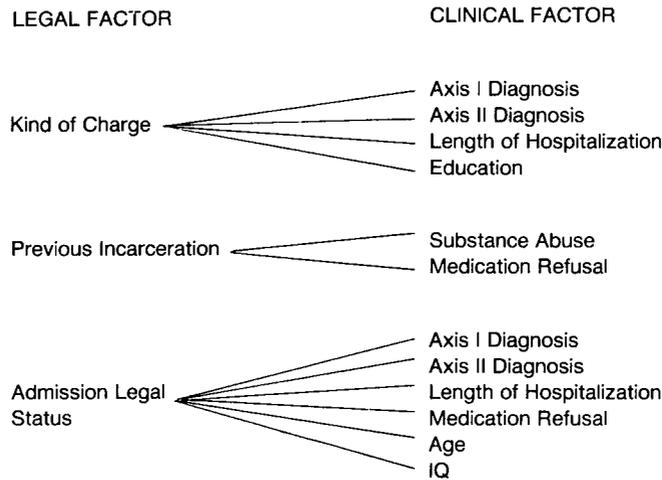


Figure 1. Diagram of relationships between legal and clinical factors. A solid line connecting two factors denotes a statistically significant relationship between the two factors.

tween substance abuse and homicide implies that therapeutic interventions for many violent individuals should focus on alcohol and drug abuse.²¹ In a previous study of drug treatment refusal in this forensic hospital population, the refusal of medication was associated with previous hospitalization and was more likely in patients who were psychotic but who did not also have a diagnosis of personality disorder.¹ Those patients diagnosed as having psychoses and personality disorders (those more likely to also be drug and alcohol abusers) were more likely to comply with prescribed drug treatment.¹ Increased drug treatment refusal among patients previously incarcerated may be related to more compelling illness characteristics such as grandiosity and denial^{22,23} and/or chronicity and the associated reduced likelihood of acute anxiety,²⁴ as well as increased possibility of having experienced side effects.²⁵

Severity of legal charges was related to

LOH and educational level. Those patients charged with a felony, especially sexual offenses, homicide, or assault/menacing, tended to remain hospitalized longer than those charged with a misdemeanor. Those charged with a felony had lower educational achievements than those charged with a misdemeanor. Diagnostically, however, these groups did not differ significantly. Those patients charged with homicide were not more or less likely to be diagnosed as psychotic, compared to the overall psychotic rate. Although a study by Wilcox confirmed the conviction that most dangerous people are not mentally ill or mentally incompetent, he found that the incidence of schizophrenia in individuals convicted of homicide was over ten times the expected occurrence of schizophrenia in the general population.²⁶ In this study patients charged with kidnapping/coercion or assault/menacing tended to be diagnosed as psychotic, whereas those charged with sexual offen-

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ses or arson were least psychotic and had the highest percentage of personality disorders. This finding is consistent with the study by Bonheur and Rosner of sex offenders, in which slightly more than half had personality disorders.¹³ Bonheur reported that a diagnosis of schizophrenic disorder occurred at a significantly higher rate among those sex offenders who were also accused of additional crimes such as robbery and burglary during the same criminal episode.¹⁴ This subgroup represented less than 25 percent of the total sample of those accused of sex-related charges.¹⁴ It is tempting to speculate that the increased LOH for these diagnostically heterogeneous groups might be based in part on social factors, including countertransference,²⁷ rather than on clinical differences.

Data from this study are supported by Levin's impression that most arsonists have psychopathic personality disorders.²⁸ Blumberg's classification of fire-setters includes those who are (1) non-psychologically motivated; (2) juvenile or adolescent; (3) compulsive (pyromaniacs); (4) psychotic; and (5) female.²⁹ Pyromaniacs comprise up to 40 percent of fire-setters.³⁰ Psychotic fire-setters comprise approximately 10–15 percent of arsonists.²⁹ Geller's study of state mental hospital inpatient fire-setters suggested that the behavior was a form of communication directed to known others.³¹ It is of interest to consider that the primary motivation (50–70%) for fire-setting across classifications, including the psychotic category, is revenge.²⁹

Each of the ALS categories can be

characterized, comparatively, with regard to the clinical variables refusal, LOH and Axis I diagnosis. Generally civil admissions have a high refusal rate, a high LOH and a high proportion of diagnosed psychotic patients. As a group, those admitted for evaluation have a low refusal rate, a low LOH and a low proportion of diagnosed psychotic patients. NGRI and IST admissions have a low refusal rate and a high proportion of diagnosed psychotic patients, which is even higher among those without a diagnosed personality disorder than among those with a diagnosed personality disorder. NGRI admissions have a high LOH while IST admissions have a low LOH. Each of these relationships is now discussed in detail.

A significantly high drug treatment refusal rate was found among that group of patients likely to be chronically mentally ill, those committed under civil law. In this population civil commitment status applies to individuals who (1) were unmanageable in another hospital setting; and/or (2) did not achieve competency to stand trial, or (3) were hospitalized beyond the varying statutory time limitations on NGRI criminal commitments. This group of civil patients is highly selected for treatment resistance. The influences of the dynamics of chronic illness on refusal were discussed previously,^{22–24} as was the increased opportunity for experiencing side effects.^{25,32} Chronicity and drug treatment refusal probably play influential roles in the findings of longer LOH and higher age for those whose ALS was civil commitment or NGRI.

Among patients admitted as IST or NGRI, there is some degree of mutual exclusivity between diagnoses of psychosis and personality disorder, i.e., the proportion of diagnoses of psychosis is significantly higher if the patient does not have a simultaneous diagnosis of personality disorder. Because this is not true of patients who are civilly committed or those admitted for evaluation of competency, this contrast demonstrates a need for future research to define these groups diagnostically. Differences in their legal status and previously demonstrated differences in LOH suggest diagnostic differences between those admitted through civil commitment and those admitted for evaluation of competency. In support of that observation the data indicate that the lowest proportion of individuals diagnosed as psychotic with regard to ALS was found among those admitted for competency evaluation. The effects of psychoses on functional intelligence may explain why this group also tended to have a higher IQ than the other three ALS groupings. Presumably all patients admitted through civil commitment have been found to be mentally ill whereas this would not be the case among those admitted for competency evaluation. Rachlin et al¹⁶ found no significant diagnostic differences between civil patients and incompetent misdemeanants.

In this study the proportion of patients admitted for competency evaluation who were diagnosed as psychotic (46.1%) is quite similar to the proportion of schizophrenic and other psychotic disorders (40%) among individuals whose psychiatric diagnoses and

evaluations for competency were reviewed by Reich and Wells.³³ The psychotic group was less likely to be found competent,³³ although in general large numbers of individuals in this legal category are found competent.^{34,35}

Roesch¹⁵ suggests that the strong relationship between psychiatric diagnosis (psychoses) and incompetence indicates a problem with the validity of the decision. The study by Reich and Wells³³ also demonstrated a paradoxical relationship between education and competency. Those individuals with more education were less likely to be found competent presumably because of the likelihood of more severe emotional disorders among the more educated individuals referred for competency evaluation.³³ The 36-day LOH in this study for patients admitted for competency evaluation compares favorably with the 43-day LOH in the study by Roesch and Golding whose findings suggest that competency evaluations do not usually require an institutional setting.³⁶

Data from this study have implications for possible predictions of clinical characteristics, patient behaviors, and responses to hospital treatment based on legal factors. Although it is not recommended that individualized treatment plans for patients be abandoned, results from this study suggest the value of recognizing certain important trends in relationships among clinical and legal factors. Examples include associations between previous incarceration and substance abuse and between previous incarceration and drug treatment refusal.

Although not previously demon-

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strated in a maximum security forensic hospital patient population, the findings in this study of relationships between various legal and clinical factors that could be compared with previous data confirm the outcomes in the other studies. In a study of admissions to an Australian state prison psychiatric unit, Glaser³⁷ discovered that 72 percent suffered from the very same disorders grouped into the category of psychosis in this study. Our data indicated that 72.4 percent fell into this category. This and other similarities to findings of previous studies suggest that the new observations herein are deserving of further investigation. These include the relationship between previous incarceration and drug treatment refusal, the finding that kidnapers have the highest percentage of psychotic diagnoses, and the differing relationships between psychosis and personality disorder among ALS categories.

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