

A Case Control Study: White-Collar Defendants Compared With Defendants Charged With Other Nonviolent Theft

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We examined the clinical, criminal, and sociodemographic characteristics of all white-collar crime defendants referred to the evaluation unit of a state center for forensic psychiatry. With 29,310 evaluations in a 12-year period, we found 70 defendants charged with embezzlement, 3 with health care fraud, and no other white-collar defendants (based on the eight crimes widely accepted as white-collar offenses). In a case-control study design, the 70 embezzlement cases were compared with 73 defendants charged with other forms of nonviolent theft. White-collar defendants were found to have a higher likelihood of white race (adjusted odds ratio (adj. OR) = 4.51), more years of education (adj. OR = 3471), and a lower likelihood of substance abuse (adj. OR = .28) than control defendants. Logistic regression modeling showed that the variance in the relationship between unipolar depression and white-collar crime was more economically accounted for by education, race, and substance abuse.

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Long recognized as a contrast to common crime, white-collar crime was defined initially as “crime committed by a person of respectability and high social status in the course of his occupation” (Ref. 1, p 1). This definition evolved to “economic offenses committed through the use of some combination of fraud, deception or collusion” (Ref. 2, p 331). The most widely accepted current definition² is that white-collar crime is of eight specific types: (1) embezzlement; (2) antitrust offenses; (3) securities fraud; (4) mail and/or wire fraud; (5) false claims and statements; (6) credit and/or lending-institution fraud; (7) income tax fraud; and (8) bribery.

State of Michigan Compiled Laws define embezzlement as when:

... a person who as the agent, servant, or employee of another person, governmental entity within this state, or other legal entity or who as the trustee, bailee, or custodian of the property of another person, governmental entity within this state, or other legal entity fraudulently disposes of or converts to his or

her own use, or takes or secretes with the intent to convert to his or her own use without the consent of his or her principal, any money or other personal property of his or her principal that has come to that person's possession or that is under his or her charge or control by virtue of his or her being an agent, servant, employee, trustee, bailee, or custodian [Ref. 3].

White-collar crime costs the United States as much as \$400 billion annually.^{4,5} That is more than 10 times the annual budget of the state of Michigan. According to the sourcebook of criminal justice, 10,700 persons were charged with embezzlement in the United States in 2002.⁴ A review of the literature reveals that more is known about offenders convicted of burglary, larceny, and motor vehicle theft than white-collar offenders, even though the latter may have a much greater economic impact on society.

One characteristic that makes white-collar crime particularly interesting is that it provides a sharp contrast to the common crimes and street criminals that usually attract the attention of lay people, criminologists, and forensic psychiatrists. High socioeconomic status is not usually associated with crime. Most thieves do not rely on computers or paper instruments to carry out the theft.⁶ It follows then, that if the crimes are different, there should be distinct differences between individuals who commit white-

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collar crime and those who commit other forms of nonviolent theft.

In the study of nonviolent theft offenders remanded to a state psychiatric hospital, Woo *et al.*⁷ found a high rate of psychopathology. The most frequent diagnosis was schizophrenia. Women had higher rates of depression than did men, while substance abuse and antisocial personality disorder were diagnosed more frequently in men. The most common offenses in their study were shoplifting and burglary. Canadian researchers compared female offenders involved in shoplifting with those involved in fraudulent behavior. They found high rates of depression and unresolved mourning in both groups.⁸ British researchers found that shoplifters were very heterogeneous in terms of their clinical problems.⁹ Fraboni *et al.*¹⁰ found that two point MMPI code profiles did not distinguish between offenders who committed fraud and those who had committed violent offenses.

Early criminologists listed gambling, extravagant living standards, unusual family expense, undesirable associates and inadequate income as factors contributing to the offense of embezzlement.¹¹ A study published in the *Journal of Gambling Studies* listed embezzlement as one of the three most common crimes committed by pathologic gamblers.¹²

Social psychologists have studied the perceived stereotype of embezzlers compared with those who commit "blue-collar" crime. They asked an equal number of white and black undergraduate college students to participate in simulated juror decisions. White embezzlers received significantly longer jail sentences than did black embezzlers, while black burglars received longer jail sentences than did white burglars.¹³

In the late 1980s Wheeler *et al.*² studied the presentencing investigative reports of 1,342 persons convicted of the eight white collar crimes in Los Angeles, Chicago, New York, and Baltimore. They compared these subjects to a sample of other persons convicted of federal crimes and to the general public. Results showed that white-collar criminals were more likely to be employed, educated, male, white, older, and financially "well off" and less likely to have prior convictions than the group of all other federal defendants. When compared with the general public, white-collar criminals were more likely to be employed, educated, and older and to have prior con-

victions. They were less likely to be financially "well off."

The findings of Pogrebin *et al.*¹⁴ contradict the stereotype of the typical embezzler. They studied the records of 23 men and 39 women found guilty of embezzlement and found that the typical embezzler in their study was a 26-year-old white woman with a high school education, one to two children and an annual income of less than \$10,000. Most worked in low entry-level positions and indicated personal debt as the reason for committing embezzlement.

A psychodynamic profile of embezzlement was described in a 1989 case study of a man convicted of embezzlement. The authors concluded that the patient's embezzlement provided him with a psychological solution to core conflicts arising from the mysterious disappearance of his parents in childhood.¹⁵ While this description is interesting, it adds little epidemiological data to the demographic data reported herein. We found no other reports of psychiatric or psychological factors relating to white-collar crime.

We hypothesized that defendants charged with white-collar crimes would have very different socioeconomic and psychiatric patterns than the offenders in the study by Woo *et al.*⁷ Specifically, we hypothesized that white-collar defendants referred for psychiatric evaluation would have higher rates of affective disorders (especially mania) and problem gambling and lower rates of substance abuse and psychotic disorders than would controls. In addition, we hypothesized that white-collar defendants would have a greater likelihood of being found competent to stand trial and to be criminally responsible for their offenses. Finally, we hypothesized that very few defendants charged with white-collar crime are referred for competency or criminal responsibility evaluations. We investigated this question with a retrospective review of court-ordered psychiatric evaluations of white-collar defendants, compared with evaluations of individuals accused of other nonviolent thefts.

Methods

Subjects

The Michigan Center for Forensic Psychiatry (CFP) conducts psychiatric evaluations for all of the district and circuit criminal courts in Michigan. Twenty-one doctoral-level psychologists and two

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psychiatrists performed the evaluations. The University of Michigan Health Services Institutional Review Board approved the project.

To compare the referral process or “judicial filtering system” of white-collar defendants with other defendants we used the Uniform Crime Report for the state of Michigan (Uniform Crime Report, 2002). We added up all defendants charged with white-collar crimes and all other crimes from 1991 through the end of 2002. We then compared the totals with the actual number of defendants referred to the CFP during those same years.

To be classified as a case, defendants had to be charged with one of Wheeler’s eight white-collar crimes.² Control subjects were selected from defendants remanded to the Michigan Center for Forensic Psychiatry by the courts for psychiatric assessment after being charged with other nonviolent forms of theft such as retail fraud, larceny, and motor vehicle theft. The available pool of controls was much larger than the total number of cases. Controls were selected at random from the available pool and matched to cases only with respect to the year that the evaluation took place. We chose a somewhat heterogeneous group of controls (in terms of offenses charged) to minimize the chance of control group bias.

We reviewed the charges of 29,310 defendants referred to the Michigan Center for Forensic Psychiatry (CFP) between 1991 and 2002, searching for defendants charged with one of the eight white collar offenses listed herein. We found 73 cases. According to Uniform Crime Reports there were 16,292 persons arrested for white-collar crimes between 1991 and 2002 in the state of Michigan. There were 4,655,000 total arrests during that time period (Uniform Crime Report, 2002⁴). Thus, the overall referral rate for white-collar defendants (0.43%) was slightly lower than the 0.54 percent referral rate for all defendants (Fisher exact χ^2 of 8.56, $p = .0034$).

Seventy of the 73 white-collar crimes were cases of embezzlement, and the remaining three were cases of health care fraud. To achieve a more homogenous case group we excluded the three defendants charged with health care fraud. Results are summarized in Tables 1, 2, and 3. In the control group, the majority of defendants were charged with retail fraud ($n = 42$, or 57.5%), with the rest divided among larceny from a building ($n = 4217$, or 23.3%), larceny from a person ($n = 426$, or 8.2%), unarmed bank robbery

Table 1 Occupations of Cases and Controls

Occupation	Case Frequency	Control Frequency
Office manager/clerk	16 (21.9)	0
Retail Sales	14 (19.2)	3 (4.1)
Unemployed	9 (12.3)	26 (35.6)
Gas station attendant/convenience store clerk	8 (11.0)	0
Attorney	4 (5.5)	0
Accountant	4 (5.5)	0
Insurance Agent	3 (4.1)	0
Manager fast food restaurant	2 (2.7)	0
Nonmanager fast food restaurant	0	7 (9.6)
Factory	0	3 (4.1)
Prostitute	0	2 (2.7)
School teacher	0	1 (1.4)
Probation officer	0	1 (1.4)
Mechanic	0	1 (1.4)

Data are number of individuals (percentage of total group). Numbers for each variable may not add up to 146 due to missing data.

($n = 424$, or 5.5%), and auto theft ($n = 423$, or 4.1%). Seven (9.6%) of the defendants attended the study evaluation while in custody; 54 (74.0%) were on bond. Thirty (41.1%) control subjects attended the evaluation while in custody; 35 (47.9%) were on bond. Table 1 lists the occupations of cases and controls.

Procedures

We developed a retrospective, case-control study examining the costs, demographic profiles and pattern of psychiatric morbidity of all white-collar defendants referred to the Michigan Center for Forensic Psychiatry (CFP) between January 1, 1991, and December 31, 2002. In addition to reviewing the evaluation letters to the court, we reviewed police reports and prior medical records when available. The first author performed coding of data from these sources. Police reports were used primarily to assess the monetary costs associated with the theft charge and to assist in constructing a time line for the onset of symptoms. If a defendant showed two or more symptoms of depression before charges were brought, they were listed in the Unipolar Depression Group. If a defendant showed symptoms of depression only after charges were brought, they were listed in the Adjustment Disorder Group.

Data Analysis

Descriptive and bivariate analyses were conducted to delineate sample characteristics and to examine relationships between case status and sociodemographics, psychiatric and substance use diagnoses,

Table 2 Univariate Relationships Between Independent Variables and Case Status

Independent Variable	Category	n*	Cases	Rate (%)	Controls	Rate (%)	p†
Eligible sample		143	70		73		
Sociodemographics							
Age		140	39.2		36.7		.359‡
Gender	Male	77	33	47.1	44	60.3	.133
	Female	66	37	52.9	29	39.7	
Race/ethnicity	White	91	55	80.9	36	60.3	.009
	African-American	41	12		29		
	Hispanic	3	1		2		
	Asian	2	0		2		
Marital status	Married	41	24	34.7	17	27.0	.430
	Divorced	26	15		11		
	Never married	62	28		34		
	Widowed	3	2		1		
Education		119	12.9		10.7		<.001‡
Employment	Yes	82	54	85.7	28	51.8	<.001
	No	35	9		26		
History of military service	Yes	16	11	21.6	5	8.9	.067
	No	91	40		51		
DSM IV Diagnoses							
Any psychotic disorder§	Yes	24	8	11.9	16	22.2	.109
	No	105	59		56		
Unipolar mood disorder	Yes	30	21	32.3	9	13.0	.008
	No	104	44		60		
Bipolar mood disorder¶	Yes	12	8	12.7	4	5.7	.160
	No	121	55		66		
Adjustment disorder#	Yes	10	7	10.0	3	4.0	.200
	No	134	63		71		
Substance use disorder**	Yes	98	38	64.4	60	90.9	<.001
	No	27	21		6		
Cluster B personality††	Yes	55	27	43.5	28	41.2	.785
	No	75	35		40		
Psychiatric history							
History as inpatient	Yes	73	32	52.5	41	65.1	.153
	No	51	29		22		
History as outpatient	Yes	102	48	75.0	52	74.3	.924
	No	34	16		18		
Substance-abuse treatment	Yes	20	9	16.4	11	19.6	.556
	No	91	46		45		
Psychotropic medications	Yes	32	12	25.5	20	31.7	.478
	No	78	35		43		
Suicide Attempts	Yes	33	20	46.5	13	46.4	.995
	No	38	23		15		
Sexual Abuse	Yes	15	9	22.0	6	26.1	.708
	No	49	32		17		
Criminal History							
Previous adult convictions	Yes	59	23	41.8	36	76.6	.001
	No	40	29		11		
Contact with juvenile justice	Yes	22	6	12.8	16	37.2	.011
	No	65	38		27		
Intoxication at time of alleged theft	Yes	31	1	1.6	30	56.6	<.001
	No	93	60		23		
Estimated value of alleged theft (\$)		99	35,792		246		<.001‡
Recommended CST	Yes	118	59	88.6	59	80.8	.240
	No	22	8		14		
Recommended NGRI	Yes	104	55	0.0	49	2.0	.292
	No	1	0		1		

* Numbers for each variable may not add up to 146 due to missing data.

† Pearson chi-square or Fisher exact test comparing cases with controls.

‡ Interval level variables were compared with a *t* test after logarithmic transformation.

§ Includes Schizophrenia, Schizophreniform disorder, Schizoaffective disorder, and Psychotic Disorder Not Otherwise Specified.

|| Includes Major Depressive Disorder, Dysthymia, and Depressive Disorder Not Otherwise Specified.

¶ Includes Bipolar I and II and Other Bipolar Disorders.

Includes Panic Disorder, Generalized Anxiety Disorder, Post-traumatic Stress Disorder, and Obsessive-Compulsive Disorder.

** Includes Alcohol and/or Nonalcohol Abuse or Dependence.

†† Includes Antisocial, Borderline, Histrionic, and Narcissistic Personality Disorders.

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Table 3 Results of Multiple Logistic Regression Comparing White-Collar Defendants With Defendants Charged With Other Forms of Nonviolent Theft

Variable	Beta	SE	Wald	df	<i>p</i>	OR*	95% CI
Substance abuse	-1.276	.590	4.679	1	.03	.28	.09-.89
Dummy variable, white	1.507	.537	7.869	1	.005	4.51	1.57-12.9
Log of education years	8.152	2.749	8.792	1	.003	3471	15.9-760,000
Constant	-8.709	3.065	8.073	1	.004		

n = 105 due to missing data.

* Adjusted odds ratio (odds ratio for being a case).

criminal history, and evaluator recommendations. Variables of interest are listed in Table 2. Analyses were conducted by chi-square and Fisher exact tests for categorical variables, and independent *t* tests for continuous variables. Education and age were transformed logarithmically to satisfy conditions for a normal distribution (we rejected normality if the ratio of kurtosis to skew was less than -2 or greater than 2). A dummy variable of white ethnicity versus all other ethnic groups was constructed to allow comparisons between groups.

Next, multivariate models were constructed with independent variables identified in the bivariate analysis as related to white-collar case status. Variables were included in the initial regression model if *p* ≤ .15 in the bivariate analysis. Multiple logistic regression was used to test for confounding and interaction of risk factors. Interaction terms were created and tested in regression models for unipolar depression with race, unipolar depression with education, and unipolar depression with substance abuse (Table 4). These were theoretically relevant

Table 4 Logistic Regression Results Examining How Substance Abuse, White Race, and Education Affect the Relationship Between Unipolar Depression and Defendant Status (the Dependent Variable)

Variable	Beta	<i>p</i>	OR*	95% CI
Unipolar depression	1.157	.009	3.18	1.33-7.61
Unipolar depression	1.123	.02	3.07	1.19-7.94
White race	1.466	.001	4.33	1.89-9.92
Unipolar depression	1.060	.043	2.89	1.03-8.07
Education	7.855	.001	257	27.5-241,000
Unipolar depression	1.03	.052	2.79	.991-7.86
Substance abuse	-1.72	.001	.17	.065-.494
Unipolar depression	0.926	.157	2.52	.699-9.111
Substance abuse	-1.257	.035	.28	.089-.915
Dummy variable, white	1.453	.008	4.27	1.456-12.556
Log of education years	6.985	.011	1080	4.9-234,175

* Adjusted odds ratio (odds ratio for being a case).

variables in that a significant interaction could have been interpreted in a meaningful way.¹⁶ Choice of the optimal regression model was based on comparison of likelihood ratios, Hosmer-Lemshow goodness-of-fit statistics and least number of variables explaining the greatest amount of variance.¹⁷ Models were created using a backward stepwise method. Variables were excluded from the final model if they did not have a significant odds ratio (95% confidence interval (CI) could not contain 1).

A series of regression models was created to illustrate how variables significant in the univariate analysis lost significance in the multivariate analysis. Statistical analyses were conducted with SPSS for Windows (ver. 12.0; SPSS Science Inc.; Chicago, IL). Samples sizes for these analyses varied because of missing data.

Results

Group Comparisons Between Cases and Controls

Table 2 presents rates of demographic variables by case classification. White-collar defendants tended to be white (80.9% versus 60.3%, $\chi^2 = 12.431$, *p* = .009), to have more years of education (12.9 years versus 10.7 years, *t* = 4.736, *p* < .001), to be more likely to be employed (85.7% versus 51.8%, $\chi^2 = 17.12$, *p* = .000), and to be more likely to have served in the military (21.6% versus 8.9%, $\chi^2 = 3.89$, *p* = .049).

White-collar defendants had higher rates of both unipolar (32.3% versus 13.0%, $\chi^2 = 6.372$, *p* = .008) and bipolar (12.7% versus 5.7%, $\chi^2 = 2.448$, *p* = .160) mood disorders. Nonembezzlement defendants had higher rates of substance use disorders (64.4% versus 90.9%, $\chi^2 = 14.475$, *p* < .001).

Previous contact with both the adult criminal justice (41.8% versus 76.6%, $\chi^2 = 12.570$, *p* = .001) and juvenile justice (12.8% versus 37.2%, $\chi^2 = 7.264$, *p* = .011) systems was more common in the control group. There were insufficient data to make

comparisons between groups based on gambling behavior.

There were no differences in recommendations for either competency or criminal responsibility between the groups. The numbers in each cell were extremely low, with only one recommendation of NGRI in the control group and none in the white-collar defendants.

The difference in dollar value estimates of the alleged thefts was very large. As mentioned in the Methods section, these estimates were obtained from the police reports that accompanied each defendant. The mean dollar value of the white-collar defendants' alleged thefts was \$35,792, compared with a mean of \$246 in the control defendants' thefts (t test = 12.910, $p < .001$).

Multivariate Analyses

Multivariate logistic regression analyses were performed to determine which independent variables were most closely related to the white-collar defendant cases. In our model the estimated adjusted odds ratio (adj. OR) represented the risk of being a case as a function of the predictor variable, controlling for all other variables in the analysis. Table 3 shows the results of modeling variables as related to the dependant variable of being a case (white-collar defendant). None of the interaction terms was found to be significant. The odds of being a case were 3,000 times higher for each unit increase in the log of education years. Likewise, the odds of being a white-collar defendant were 4.5 times higher for whites than for other ethnicities. Defendants who abused substances were only one-fourth as likely to be white-collar defendants. The final regression model had a -2 log likelihood ratio of 105.75, Nagelkerke R^2 of 0.372, and Hosmer-Lemeshow chi-square of 3.745.

Based on regression modeling of independent variable pairs, it appeared that substance abuse accounted for the largest amount of variance between depression and case status (Table 4). When unipolar depression was modeled as the only independent variable, it had an odds ratio of 3.18. Controlling for substance abuse (by adding it to the model) reduced depression's odds ratio to 2.79 (a nearly 10% reduction in odds). Likewise, but to a lesser extent, education reduced the depression odds ratio by .29, while white race reduced it by .11.

Discussion

We set out to study the eight offenses commonly considered white-collar crimes but, after a review of nearly 30,000 referrals, we found only embezzlement and health care fraud. This was an unexpected finding that has several possible explanations. Perhaps defendants charged with antitrust offenses, securities fraud, mail and/or wire fraud, false claims and statements, credit and/or lending-institution fraud, income tax fraud, or bribery are less likely to be referred for psychiatric evaluation. Perhaps embezzlement and health care fraud represent defendants of lower socioeconomic strata (and lower defense budgets) than do other forms of white-collar crime.

Our final regression model showed that white-collar defendants had a higher likelihood of white race, and more education, and a lower likelihood of substance abuse than control defendants.

Controlling for education differences, white-collar defendants were more likely to be white than were control subjects. This finding is consistent with those of several other studies.^{5,18} Unfortunately, education was the only socioeconomic variable collected. Controlling for race, white-collar defendants were more educated than control subjects. Both black and white white-collar defendants were likely to have more education. This is consistent with results in a prior study.⁵ Future prospective studies should attempt to include data about income and occupation.

Our hypothesis that white-collar defendants would have higher rates of bipolar depression was not confirmed. Controlling for race, education, and substance abuse in the regression model, neither bipolar nor unipolar depression was significant. It is likely that the variance in the relationship between depression and white-collar crime was more economically accounted for by education, race, and substance use.

The finding of a lower rate of substance abuse or dependence in the white-collar defendants was consistent with our hypothesis and with previously published reports.¹⁹ The rate was well above that of the general population but well below the rate associated with other forms of nonviolent theft. According to the NIMH Epidemiologic Catchment Area Study, 16.7 percent of the U.S. population over the age of 18 met the DSM III criteria for a lifetime diagnosis of either abuse of or dependence on some substance.²⁰ The extremely high rate of substance abuse in the control defendants is similar to that found in previ-

ously published reports.^{21,22} One possible explanation for our finding is the confounding of substance abuse with lower socioeconomic strata. Arguing against that explanation is our final regression model in which, when controlling for education (the only socioeconomic variable available to us), we found that substance abuse remained more likely in the control group.

Potential limitations in our study included using clinical impression to assign diagnoses rather than Structured Clinical Interviews for Diagnosis (SCID). Structured interviews would have been preferred. In their absence, we believe that the reliability of clinical impressions made by experienced evaluators approaches the reliability of structured interviews in certain populations. This has been demonstrated in other studies.²³ The small sample size limited statistical power to detect potentially meaningful differences in psychiatric status. Another potential limitation was possible bias in the selection of control subjects. We attempted to minimize this risk by using a fairly heterogeneous control group (some defendants charged with retail fraud and some with larceny, bank robbery, or auto theft). Defendants accused of violent offenses were excluded. Finding suitable comparison groups is often a challenge in a forensic setting. However, we feel that by using this control group we have minimized potential biases in how diagnoses were assigned and how demographic variables were collected.

Retrospective chart reviews often present obstacles to researchers. These obstacles include difficulty in validating the data, in controlling extraneous variables, and in encountering missing data. The reviewer is limited to the existing data and has less ability to manipulate variables of interest. For the study of rare conditions such as white-collar defendants in a psychiatric setting, retrospective case control designs may provide the best means of obtaining a critical mass of cases.

The rate at which people charged with white-collar crimes were referred for evaluation was only slightly lower than the rate at which other defendants were referred. This suggested that the filtering process for white-collar defendants was slightly tighter than for other criminal defendants. Our conclusions refer specifically to embezzlement defendants who were referred for evaluation. It must be kept in mind that a population of embezzlement defendants referred for competency and criminal responsibility

evaluations may not be representative of white-collar defendants in the general population.

To the best of our knowledge, however, this is the first study that attempts to describe the psychiatric characteristics of a white-collar crime group in a systematic controlled fashion. Interested parties may include criminologists and in particular those who study white collar crime. Our findings may well provide an initial view into the psychiatric and demographic characteristics of the larger population of white-collar defendants. The conclusions reached in this study should be confirmed by larger, possibly prospective studies.

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