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THE EFFECT OF LEGAL SUPERVISION
ON NARCOTIC ADDICTION AND CRIMINAL BEHAVIOR

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I. Introduction

The analyses reported here are an investigation of the effectiveness of legal supervision in controlling antisocial behavior and promoting prosocial behavior in chronic addict offenders. It is an offshoot of earlier work involving addicts in methadone maintenance treatment programs (McGlothlin and Anglin, 1981). The present study is designed to answer a series of questions: (1) what is the general effect of legal supervision on the drug use levels and criminal behavior of addicts? (2) does legal supervision have time course effects? (3) what are the differential effects of various types of legal supervision, e.g. probation or parole, and the intensity of monitoring, e.g. with or without urinalysis, or number of contacts per month.

A. Literature Review

The Relationship Between Drug Abuse and Crime

There is overwhelming evidence that criminal behavior is correlated with drug use (Gandossy et al., 1980; Greenberg and Adler, 1974). Much of the literature on drug use and crime focuses on the high rates of property crime committed by heroin addicts during periods of addiction (Ball, Rosen, Flueck and Nurco, 1981; Ball, Rosen, Friedman, and Nurco 1980; Nurco and Shaffer, 1982; McGlothlin, Anglin and Wilson, 1977; Anglin and Speckart, 1986a,b; Speckart and Anglin, 1987; Johnson et al., 1985). The level of criminal activity is higher among addicts than would be expected by persons of the same age group (O'Donnell, 1969). The findings on the strong positive relationship between narcotics use and crime reported by Anglin and Speckart (1987) were replicated by Anglin and Hser (1987) for a sample of women methadone maintenance clients. Surveys of prison inmates (Chaiken and Chaiken, 1982; Petersilia et al., 1978), and felony probationers (Petersilia, Turner, Kahan, and Peterson, 1985) show that "violent predators" often have a history of drug use, particularly hard drugs, such as heroin. In a secondary analysis of the Rand Inmate Survey data, combined with a Bureau of Justice Statistics survey of inmates from state corrections, Chaiken and Chaiken (1985) report that drugs played a major role in the childhood life-style of men most likely to be high-rate offenders. They also report that juvenile drug use carried over into adult years. Recently there is consistent evidence that both arrestees and probationers have positive urine tests for heroin, cocaine, PCP, and other drugs (Toborg, 1984; Wish, Brady, Cuadrado and Sears, 1984; Wish, Cuadrado and Martorana, 1986).

Delinquency, Drug Use, and Crime

Despite the extent and consistency of the findings, the designs of most reported studies do not allow an unambiguous specification of causality in the drug use-crime literature. The authors of one longitudinal study (Johnston et al., 1982) conclude that delinquency characterized by criminal behavior precedes drug use. Robins and Murphy (1967) in another retrospective longitudinal study found delinquents more likely than non-delinquents to use drugs and, after initiation into drug use, to begin to use heroin. Other findings suggests that similar factors precede both drug use and delinquency

(Speckart and Anglin, 1985). Kandel et al. (1978) argue that drug using behavior follows a particular sequencing pattern, beginning with cigarette and marijuana smoking and leading to use of "hard" drugs such as cocaine, barbiturates, and heroin. Regardless of the etiology of drug use and delinquent behavior, the evidence clearly points to a reciprocal relationship between drug use and crime. Thus, efforts at preventing and controlling delinquent and criminal behavior also need to focus on antecedents of both. In reviewing the literature on drug abuse interventions and its relationship to criminal behavior, the present article focuses on narcotics addiction.

Sequence of Drug Use and Crime

Several studies indicate that a high proportion of narcotics addicts were arrested prior to addiction. For example, in a study of admissions to the California Civil Addict Program (CAP) McGlothlin, Anglin, and Wilson (1977) found that 80% of the subjects had arrests for property crime prior to addiction. Anglin and Speckart (1986b) found that 50% of addicts committed theft prior to addiction. Nurco and DuPont (1977) report that black addicts committed more crimes before addiction than did whites. On the other hand, over 60% of addicts in studies by Voss and Stephens (1973) and O'Donnell (1966, 1969) had no criminal involvement prior to addiction.

While pre-addiction findings regarding drug use and crime have produced contradictory findings, research studies consistently indicate that criminality increases after addiction (Biernacki, 1973; Nurco and DuPont, 1977; Stephens and Ellis, 1975; Weissman, 1976; Anglin, Speckart, 1986a,b). During periods of opiate use, subjects in one study increased arrest rates five-fold (DeFleur et al., 1969). Ball, Rosen, Flueck, and Nurco (1981) show a six-fold increase in number of crime days per year during addiction as compared to periods of abstinence. However, a major problem with the findings of increased criminality during addiction is that most studies do not control for age (Gandossy et al., 1980), and as criminologists have shown, the frequency of criminal behavior increases with age. Other methodologies which aggregate behavioral measures from the addiction career into means which are representative of periods of varying narcotics use levels show that the higher the associated narcotics use level, the higher the degree of concomitant criminal activity (Anglin and Speckart, 1986b; Ball, Rosen, Flueck and Nurco, 1981; McGlothlin, Anglin and Wilson, 1977). Speckart and Anglin (1987) use the term "approximate simultaneity" to describe the intimate correspondence between narcotics use and property crime. Speckart and Anglin also state that higher addiction levels are correlated with more serious and more profitable criminality, e.g. robbery and forgery. Another important finding from this study is the inverse relationship between drug dealing and property crime. Dealing activities by addicts obviated to some extent the need for income from crime. Dealing predicted future narcotics use and suppressed future property crime.

There is also sufficient evidence to support a hypothesis of decreasing criminality with decreasing narcotics use, particularly when these periods of decreased use are linked to social interventions such as legal supervision or treatment. Nurco (1976) found arrest records were lower during the periods "off" narcotics than during the "on" periods. McGlothlin, Anglin, and Wilson (1977) report that the percent time committing crime, the number of crime days per month and income from crime decrease as a function of decreasing narcotics

use. Decreases in narcotics use have been attributed to both treatment interventions and natural factors, such as maturing out. Winick (1962) found maturation occurred with age (36) and career length (8 years). But studies by McGlothlin and Anglin (1981) and Anglin et al., (1986) which tested this hypothesis showed no support. In fact, this study concludes that shutting off methadone maintenance increases criminal behavior. This "maturing out" factor has also been tested in the criminological literature (Glueck and Glueck, 1940; Wolfgang, Figlio, and Sellin, 1972). However, the evidence is unclear as Murray and Cox (1978) show maturation is unrelated to treatment outcome in a delinquency intervention program. One cautionary note, however, these studies of "maturation" in criminology refer to delinquency rather than adult criminal careers.

Treatment Effects

Few studies have investigated jointly the effectiveness of the criminal justice system and the drug treatment community on the relationship between drug use and crime. Instead, research has focused separately on the individual effectiveness of such treatments as methadone maintenance and specific criminal justice system programs such as the civil addict programs and that of probation or parole rehabilitation, and incarceration.

In the criminal justice field, many researchers have agreed with the conclusion by Martinson (1974) that "nothing works" to change the behavior of criminal offenders. The report by Lipton, Martinson, and Wilks which reviewed over 200 studies of rehabilitation programs within the criminal justice system has been surrounded by much controversy and criticism. Many researchers have indicated that their conclusion is overly simplistic (Orsagh and Marsden, 1985; Salmon and Salmon, 1983). One of the major points of criticism is the use of arrest recidivism to measure the success or failure of a program (Sechrest et al., 1978). More realistic measures of program effectiveness include a decrease in frequency of arrests or in the seriousness of arrests.

In contrast to the criminal justice literature which suggests "nothing works" and promotes policies of "target hardening" and "selective incapacitation", the literature on drug abuse treatment programs is more positive (Sells et al., 1979; Gandossy et al., 1980; Collins, Rachal, et al., 1982; Collins and Allison, 1983; McGlothlin, Anglin and Wilson, 1977; Anglin and McGlothlin, 1984). It has been shown that methadone maintenance is generally effective in reducing narcotics use, and specifically in decreasing criminal behavior by narcotics addicts (Anglin and McGlothlin, 1983; Anglin, McGlothlin, Speckart and Ryan, 1983; McGlothlin and Anglin, 1981).

A rigorous evaluation of the California Civil Addict Program (CAP) concluded that intensive supervision with urine testing was also effective in reducing daily narcotics use and criminal behavior (McGlothlin, Anglin, and Wilson, 1977). The early CAP program consisted of a minimum six-month inpatient period as part of a seven year commitment. An outpatient period, or supervised community release which included supervision with urine testing, followed the inpatient period. Addicts who remained drug free for a period of three years were discharged from the program. Subjects who violated conditions of release could be returned for further inpatient periods. In later years (post 1970), the program changed slightly, requiring two years of drug-free outpatient treatment for discharge. When compared to other legal

supervision, the outpatient status (OPS) supervision with urine testing was shown to be more effective than other supervision with testing and supervision without testing in reducing daily narcotics use, drug dealing, and criminal behavior. These findings were replicated in a later study of a 1970 CAP cohort.

The results of another study by Anglin, McGlothlin and Speckart (1981) of methadone maintenance revealed that "the addition of legal supervision produces only marginal improvement over that which would have resulted from the maintenance alone" (p. 168). Thus, the authors conclude that the availability of methadone maintenance improves on the outcome from parole supervision alone. Further evidence of the effectiveness of methadone maintenance in reducing drug use and criminal behavior is found in a study of the consequences of shutting off MM programs (McGlothlin, Anglin, Speckart, and Ryan, 1983). After termination of the program 55% of the subjects were readdicted and had higher arrest rates.

The Treatment Outcomes Project (TOPS), a federally funded drug treatment program, was a type of diversion program designed to refer clients from the criminal justice system to drug treatment in outpatient drug free or residential drug free programs. The results indicate a decrease in the number of serious offenders after treatment (Collins et al., 1976, 1980).

Research conducted by Sells et al. (1976, 1980) on the Drug Abuse Reporting Program (DARP) also provides evidence of reduction in criminal behavior after entry into drug treatment. Treatment included methadone maintenance, therapeutic communities, outpatient drug free and detoxification. Methadone maintenance and therapeutic communities and outpatient drug free programs were found to be superior to the other types of programs. A longer treatment period was also positively related to outcome. Simpson and Savage (1980) show dramatic improvements pre and post 6 year follow-up. Simpson, Joe, Lehman, and Sells (1986) in a 12 year follow-up show little change. "The DARP data demonstrate that treatment has played an increasing role in helping end addiction. In addition, the threat of legal sanctions appeared to be a significant consideration in ending addiction for many individuals" (p. 120).

Follow-ups at three and six-years of Phoenix House, a therapeutic community program in New York City, showed reduction in the percentage of persons arrested and rates of arrest as well as narcotic abuse (DeLeon et al., 1972, 1979, 1984). In addition, employment and psychological status factors improved as well.

Hypotheses

The available evidence from the literature indicates there is a significant reciprocal relationship between drug use and crime such that increases and decreases in narcotics use are paralleled by increases and decreases in criminal behavior. Specifically, studies have shown that social interventions of legal supervision with testing and drug treatment, especially methadone maintenance are effective in reducing criminal behavior. Based on these prior findings, it is hypothesized that:

- 1) In general, legal supervision will reduce both drug use and criminal behavior.
- 2) The immediate effect of legal supervision deteriorates over time and rebound effects will be seen after discharge from legal supervision.
- 3) Legal supervision with urine testing will be more effective than any other type of supervision.
- 4) The effects of legal supervision will be strongest for drug use, but corollary effects will be found for drug dealing and criminal behavior.

II. Method

A. Sample

The subjects for the present analysis were obtained by combining three separate groups of subjects who were followed up in three distinct research projects based in Southern California (Anglin et al., 1981, 1983; McGlothlin and Anglin, 1981). The first group was a sample of 347 male first admissions between the years 1971-1973 to Los Angeles, San Bernardino, and Orange County methadone maintenance programs. The sample was selected to study the impact of civil commitment parole status on the behavior of patients receiving methadone; the sample was not, however, necessarily representative of the overall population of admitted patients receiving methadone. Of this sample, 297 subjects were interviewed during the years 1978 to 1979, an average of 6.6 years after admission.

The second group of subjects consisted of 112 male methadone maintenance patients selected from rosters of clients active on June 30, 1976, at the Bakersfield and Tulare, California, clinics. Of these, 108 were also interviewed during 1978 and 1979, an average of 4.4 years after admission. The third group of subjects consisted of 316 males who were active on September 30, 1978, at the San Diego, Riverside, San Bernardino, and Orange County clinics. Of these 297 were interviewed during the years 1980-1981, an average of 5.4 years after admission.

In the present study the first group is referred to as the "Admissions" cohort and the other two groups, combined, are referred to as the "Cross Section" cohort. The samples are generally representative of California methadone maintenance patients. Complete descriptions of the specific composition of these samples are provided in Anglin and McGlothlin (1984). Combining completion rates for all three samples yielded an overall follow-up rate of 90% of those alive at the time of interview. Since there were so few Black clients (less than 6% of each sample), and since Black clients constitute a small percentage of California methadone patients (Anglin and McGlothlin, 1985), they were excluded from the present study, resulting in a total sample size of 671. Because the study focuses on legal supervision after addiction, those persons whose first legal supervision period preceded their first narcotics addiction period are not included in the present study. Because the Admissions cohort and the Cross Section cohort represent different sampling

strategies, analyses are conducted separately for the two cohorts to confirm findings by replication.

B. Interview Procedure

The retrospective interview procedure used was adapted in part from a schedule developed by Nurco, Bonito, Lerner, and Balter (1975a, 1975b) and has been described in detail in an earlier report (McGlothlin, Anglin, and Wilson, 1977). Briefly, the procedure involves the preparation, before the interview, of a schematic time sheet that shows all known arrests and intervals of incarceration, legal supervision, and methadone treatment -- data that can be obtained from the criminal justice system and treatment program records. In discussion with the subject, the interviewer first establishes the date of the first narcotic use on the time chart and then proceeds chronologically over time to the point when narcotic use changes from less than daily use to daily use, or vice versa), or to when the respondent's legal or treatment status changes. Data are then collected on narcotic use, employment, criminal behavior, and certain other variables for that interval. The interviewer repeats this process for the next and following intervals, each recorded interval being initiated by a change in status, or use, up to the date of the interview. Each interval recorded is homogeneous in terms of narcotic use, legal status, and drug treatment enrollment. Each point in the addiction career of the subject is thus measured in terms of these and other variables.

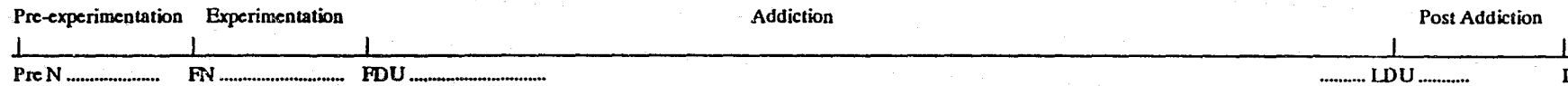
This method of segmenting the interview has proved quite successful in collecting retrospective longitudinal data covering long periods of personal addict history. Typically, the respondents appeared to have little difficulty recalling for a specific segment whether they were employed, how frequently they were using narcotics, and their costs, and how they were obtaining funds for their purchase. The procedure required the interviewer to work closely with the respondent to structure the period of concern, using the corroborative information and memory aids at his disposal (e.g, life events and associated dates from previously collected records).

C. The Narcotic Addiction Career

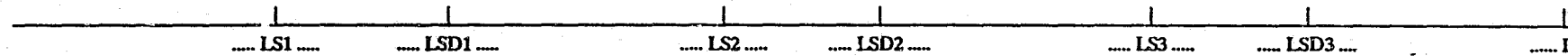
The retrospective longitudinal data allows examination of both the narcotic addiction career and the criminal career. The data are chronologically sequenced from the year prior to initial narcotics use to the time of interview (see Figure 1), a procedure which allows examination of the narcotics-crime relationship during various stages of the addiction career. The effects of significant events (such as addiction, entry into and discharge from legal supervision, incarceration, and termination of addiction) are each analyzed and evaluated with respect to their influence on the narcotics-crime relationship. Addiction is defined, for purposes of this study, as daily narcotics use for a consecutive period of 30 days. Termination of addiction occurs at that point when drug use becomes less than daily use and does not return to daily use during any subsequent period.

Figure 1
Addiction Career

Addiction Career



Legal Supervision Cycle



Abbreviations

- Pre N = one year prior to first narcotics use
- FN = first narcotics use
- FDU = addiction (30 days or longer daily use)
- LDU = last daily narcotics use
- I = interview

Critical Periods Examined in Analyses:

- | | | | |
|-----------|---|-----------|---|
| LS1-12 | = 12 mos. prior to 1st legal supervision | LSD2 | = discharge from 2nd legal supervision |
| LS1 | = entry into 1st legal supervision | LSD2 + 12 | = 12 mos. post 2nd legal supervision discharge |
| LS1 + 12 | = 12 mos. post 1st legal supervision entry | LSD2-LS3 | = post 2nd to 3rd legal supervision |
| LS1-LSD1 | = 1st legal supervision period | LSD2-I | = post 2nd legal supervision to interview |
| LSD1 | = discharge from 1st legal supervision | LS3-12 | = 12 mos. prior to 3rd legal supervision |
| LSD1 + 12 | = 12 mos. post 1st legal supervision discharge | LS3 | = entry into 3rd legal supervision |
| LSD1-LS2 | = post 1st to 2nd legal supervision | LS3 + 12 | = 12 mos. post entry into 3rd legal supervision |
| LSD1-I | = post 1st legal supervision to interview | LS3-LSD3 | = 3rd legal supervision |
| LS2-12 | = 12 mos. prior to 2nd legal supervision entry | LSD3 | = discharge from 3rd legal supervision |
| LS2 | = entry into 2nd legal supervision | LSD3 + 12 | = 12 mos. post 3rd legal supervision |
| LS2 + 12 | = 12 mos. post entry into 2nd legal supervision | LSD3-I | = post 3rd legal supervision to interview |

Figure 1 shows an example of an addiction career overlain by three periods of legal supervision. In this example last daily use (LDU) occurs after discharge from the third legal supervision. However, this is not true for all addiction careers. It may be that last daily use occurs after entry into the second legal supervision or between LSD2 and LS3. Persons may also be in methadone treatment (MM) at any time during the career, from addiction to last daily use, some may remain for lengthy periods, even up until the interview.

D. Measures: dependent variables

Included as dependent variables to examine the posited questions regarding legal supervision and to test the hypotheses are narcotics use indicators, criminality indicators, legal supervision variables, and methadone treatment variables. The present study uses self-report data on narcotics use and criminal behavior. Narcotics use indicators include the percent time using daily and the percent time abstinent (no narcotics use). There are three types of criminality indicators: percent of nonincarcerated time involved in crime, number of crime days per month, and dollar income from crime. Although the data include measures for specific types of crime, e.g. robbery, burglary, drug sales, etc., all types of property crime are combined into a single value for each of these three types of indicators, yielding three 'total crime' indicators for each time interval to be examined. Legal supervision variables are represented by the duration of the supervision period and the average number of urine tests per month. The percent time on methadone treatment is also used as a dependent variable in the analyses.

E. Analyses

Repeated measures analysis of variance (ANOVA) is used to test the effects of legal supervision periods on the dependent variables, drug use and crime. This technique has been shown to be reliable and effective in previous analyses (Hser, Anglin, and Chou, 1987). In testing the different hypotheses, three separate analyses have been run, covering different time periods. The first analysis examines both the first and second questions, what is the general effect of legal supervision and does it have time course effects? The second set of analyses further examines the time course effects of legal supervision, looking at critical time periods. The third set of analyses focus on the third question about the differential effects of various types of legal supervision.

The first set of analyses using ANOVA tests the cumulative effects of sequential periods of legal supervision. The following time periods are included in the analyses: FDU-LS1, LS1-LSD1, LSD1+12, LSD1-LS2, LS2-LSD2, LSD2+12. Although some subjects had a third legal supervision period, there were too few subjects for adequate statistical analysis.

In the second set of analyses, twelve month time periods are used to examine the data, e.g. LS1-12 and LS1+12, LS2-12 and LS2+12, LS3-12 and LS3+12. These analyses test the immediate impact of legal supervision on drug use and criminal behavior. Future analyses will examine the deterioration of legal supervision effects during legal supervision by comparing LSD1-12 and LSD+12, LSD2-12 and LSD2+12, and LSD3-12 and LSD3+12.

The third set of analyses looks at changes in behavior for different types of legal supervision and different intensity levels of urine monitoring. Subsets of analyses include comparing periods of supervised activity to periods of no supervision and looking at various types of supervised periods within the individual's addiction career. Legal supervision is categorized into three levels of intensity to examine the effects of the different levels. The three levels of supervision are CAP Outpatient Status (OPS), supervision with urine testing, and supervision without testing. CAP was the California Civil Addict Program which began in 1963. Narcotic addicts were diverted from the criminal justice system and into treatment by civil commitment to the CAP program. The program consisted of at least 6 months of inpatient treatment followed by up to seven years of drug-free outpatient status (OPS), a type of intensive supervision which included urine testing. Approximately half of the subjects in the Admissions cohort were involved in the CAP program, and all subjects received methadone maintenance in various clinics throughout the Admissions and San Diego area. Subjects are followed over the addiction career from the year prior to first narcotics use, through treatment periods in methadone maintenance and/or the CAP program, and post discharge from these programs. Because many addicts experience several types of legal supervision, the data provide the opportunity to examine the effects of different types of legal supervision. In the present study the different levels of supervision are combined to examine the effects of testing, other supervision with testing and OPS with testing as well as different levels of testing (low vs. high). Low testing is defined as 1 or 2 urine tests per month. High testing is defined as 3 or more urine tests per month. Thus, the ANOVAS test no supervision vs. supervision, no testing versus testing, testing while on OPS versus testing while not on OPS, testing low versus high, OPS low versus high testing, and non-OPS low versus high testing. For each of these analyses the sample differs, including in each ANOVA only those individuals who have data for the time periods of interest.

Future analyses are planned using time series analysis to model the time course of changes in drug use and crime related to legal supervision intervention. In another paper (Speckart, Anglin, Deschenes) a causal modeling technique (LISREL) is employed to test a model of causal effects and interactions in drug use and crime.

III. Results

A. BACKGROUND

Both Chicanos and whites reported initial narcotics use at an early age, 18-19 years old. Addiction, or daily use for a consecutive period of 30 days occurred on an average, almost two years later. The mean age at first arrest occurred two to three years prior to first narcotics use. As shown in Table 1 the first legal supervision did not occur until between the ages of 23 and 25 and the average age at discharge from the first legal supervision was 27 to 29 years old. These data suggest that these addict offenders were being placed

under legal supervision during the most active years of a criminal career.¹ The second legal supervision period commenced at an average age of 28 to 30 for both Chicanos and whites in the Admissions cohort, but at a younger age of 26 for whites in the Cross Section cohort. With the exception of that group, entry into the third legal supervision occurred between the ages of 31 and 35. It seems likely, then, that those addict offenders with a third legal supervision were the chronic addicts who were probably responsible for a majority of the crimes.

The first legal supervision period averaged about five years in duration. Chicanos were more likely than whites to be on OPS a greater percentage of the time. Subjects from the Admissions cohort were on OPS more of the time than those from the Cross Section cohort. In comparison, Chicanos in the Cross Section cohort were on probation 44% of the time and whites 67% of the time during the first legal supervision period. With the exception of whites in the Cross Section cohort, subjects spent about 20% time incarcerated during the first legal supervision period. Also important, subjects in the Cross Section cohort were under supervision with testing almost 50% of the time, in comparison to subjects in the Admissions cohort who were tested 23-26% of the time in the first legal supervision.

The second legal supervision was similar to the first, except it was shorter in duration for whites in the Cross Section cohort. Again, subjects in the Cross Section spent a greater percentage of time under supervision with testing and less time incarcerated. In addition, all subjects with the exception of whites in the cross section were on OPS 25-36% of the time while under legal supervision. Another interesting figure is the percent time absence from legal supervision. The high rates for the Admissions cohort in comparison to the Cross Section suggest that legal supervision may have been different for these two cohorts. Differences can also be seen in the percent time on probation which is greater among subjects in the Cross Section cohort.

B. EFFECTS OF SUCCESSIVE LEGAL SUPERVISION PERIODS

First Legal Supervision: Admissions Cohort

Legal supervision has both an immediate effect and an extenuated effect on drug use and criminal behavior (See Table 3). Among both Chicanos and whites there is an immediate decline in percent time daily use (from about 85-90% time to 45% time), with a corresponding increase in percent time no drug use (from 4-6% to 27% no use). In the year following discharge from first legal supervision there is a slight rebound effect, among Chicanos percent time daily use increases slightly from 46% to 51% and percent time no use decreases by 8%. In comparison, among whites there is an increase in percent time abstinent (from 27% to 32%) and a slight decrease in percent time daily use (48% to 43%). Drug dealing is also affected by legal supervision. For both Chicanos and whites there is an immediate reduction in percent time dealing

¹ Statistics indicate the highest incidence of criminal behavior occurs between the ages of 18 and 27, U.S. Dept. of Justice, Bureau of Justice Statistics, *Report to the Nation on Crime and Justice* (Washington, D.C.: 1983).

from 63% to 35% for Chicanos and from 54% to 36% for whites. However, during the 12 months after discharge from first legal supervision percent time dealing increases among Chicanos and decreases among whites.

The effect of legal supervision on criminal behavior is more pronounced for Chicanos than whites. Among Chicanos there is a decrease in percent time crime (45% to 29%) and number of crime days per month (9 to 6) during legal supervision with a rebound during the first year following discharge (% time crime up to 34% and number of crimes up to 7). In comparison, among whites the percent time committing crime decreases more following discharge from first legal supervision (from 38% to 26%).

Cross Section Cohort

The same general patterns found for the Admissions Cohort of decreases in drug use and criminal behavior following legal intervention and increases post discharge apply to the Cross Section cohort, but results are more significant with respect to criminal behavior. Decreases in drug use immediately upon entering legal supervision are also found for the Cross Section cohort (See Table 3). Again, there is a greater reduction among whites than Chicanos as whites cut the percent time daily use in half during supervision and remain at the suppressed level during the year following discharge (whites 85% to 39% in comparison to Chicanos 87% to 50%). Chicanos also rebound to slighter higher levels of percent daily use. In comparison to the Admissions cohort, percent time abstinent is lower for Chicanos and percent time daily use among whites is lower in the Cross Section cohort. The patterns among Chicanos and whites for drug dealing are the reverse of those found for the Admissions cohort. Drug dealing decreases significantly for whites (from 63% to 43% among whites in comparison to 55% to 43% among Chicanos).

Criminal behavior is suppressed among Chicano in the Cross Section sample (from 43% to 18% in percent time crime) as is the number of crime days per month (from 7 to 4). Among whites percent time crime is only slightly reduced (from 38% to 24%), however, the results are significant. In comparison, the number of crime days per month was cut in half (8 to 4). Even the amount of income from criminal behavior significantly reduced for Chicanos (597 to 340 per month). On the other hand, there is a rebound in percent time crime (from 24 to 27%), number of crime days (from 4 to 5), and dollar income from crime among whites (from 550 to 702) in the year following discharge from first legal supervision.

Second Legal Supervision: Admissions Cohort

Thirty-six Chicanos and thirty-one whites from the Admissions cohort were committed for a second legal supervision period. It is likely that these persons were more chronic drug users and criminals than those who only had one legal supervision period. As can be seen in Table (4), the patterns from first legal supervision to second legal supervision and year following first legal supervision are similar to those found for the earlier analyses of the first legal supervision.

Drug use among these individuals with a second legal supervision period appears to be more chronic. Although the percent time daily use decreased during the first legal supervision period (from 90% to 58% for Chicanos and

from 79% to 55% for whites) this is higher than the similar time period for those with only one legal supervision. Moreover, these individuals rebound to a higher level of daily drug use after first legal supervision than those with only one legal supervision (78% for Chicanos and 71% for whites in comparison to 51% and 43% respectively). Nevertheless, the second legal supervision decreases percent time daily use and there is not a significant rebound in the year following second legal supervision for either Chicanos or whites. The pattern with regard to percent time abstinent is similar yet opposite, increasing during first legal supervision, decreasing in the time period following first legal supervision, and increasing during and after second legal supervision.

The percent time dealing drugs does not change significantly over the five time periods among whites. However, among Chicano there is a decrease at first legal supervision followed by an increase and another decrease during second legal supervision. This pattern is also reflected in the jump in income from drug dealing during the LSD1-LS2 time period among Chicano.

The effect of first and second legal supervision on criminal behavior differs for Chicanos and whites. Among Chicano there is the expected pattern of decrease during first legal supervision, but they rebound to an even higher level after first legal supervision, and decrease during, and following second legal supervision. Among whites there is an increase in criminal behavior during first legal supervision, a slight decrease in the time period following, and a significant decrease during and following the second legal supervision.

Cross Section Cohort

A smaller group of individuals in the Cross Section cohort (20 Chicano and 22 whites) had a second legal supervision period. As shown in Table 4 both Chicano and whites show a decrease in percent time daily use during the first legal supervision and rebound in the year following discharge. Moreover, the decrease in percent time daily drug use is also significant during and after the second legal supervision. The percent time abstinent from drug use increases among whites to 53% following second legal supervision and among Chicano to 40%.

Percent time dealing drugs and income from dealing do not change significantly across the time periods among Chicano. On the other hand, percent time dealing drugs is reduced among whites during both first and second legal supervision and rebounds to the higher levels following each period of supervision.

Involvement in criminal behavior, as measured by the percent time crime and number of crime days, also follows the expected pattern of decrease during first and second legal supervision and remaining fairly low following second legal supervision, with some exceptions. The second legal supervision reduced percent time crime among Chicano from an initial 54% time to 20% time. Among whites percent time crime is reduced from 42% to 18% time. The number of crime days per month is significantly reduced among both Chicano and whites, from 7 days to 4 days among Chicano and to 2 days among whites.

C. IMMEDIATE EFFECTS OF LEGAL SUPERVISION: PRE/POST INITIATION OF SUPERVISION

Repeated measures analyses were also used to test for differences in the dependent variables 12 months before and after the first, second, and third legal supervision periods. Specifically, the 12 months of non-incarcerated time after addiction and prior to the first legal supervision (or second, or third) are compared with the 12 months after legal supervision has begun. This measures the direct impact of legal supervision on the specific behaviors. The results are presented separately for each supervision period in Table 5 for the Admissions cohort and Table 6 for the Cross Section cohort.

Admissions cohort

The analyses indicate that legal supervision has an immediate impact on drug use during the first 12 months of supervision. As shown in Table 4-1 the percent time abstinent increases significantly from 7-10 % to 17-19% and the percent of daily drug use decreases from 76-82% to 55-61%. In addition, the percent time dealing drugs is reduced for both Chicanos and whites. There are corresponding decreases in percent time crime and number of crime days per month for Chicanos, however, the differences pre and post legal supervision for whites are opposite. Among Chicanos the percent time crime reduces from 47% to 35%, yet among whites it increases (non-significantly) from 40% to 43%. The number of crime days per month also decreases among Chicanos (9.6 to 7.1), whereas it increases among whites (7.9 to 9.1). Chicanos decrease the number of thefts, but whites increase the number of burglaries.

The changes pre and post second legal supervision are similar and show an even greater reduction in drug use and criminal behavior. For example, among Chicanos percent time abstinent from drug use decreased after first legal supervision discharge and increases during 12 months after entry into second legal supervision to 19%. Among whites a similar pattern is found, except the second legal supervision increases percent time abstinent even higher than the first legal supervision (26% in comparison to 17%). Percent time daily drug use is decreased significantly among both Chicanos and whites and decreases even further than the first legal supervision period (down to 50% for Chicanos and 42% for whites). Although the second legal supervision again reduces the percent time dealing drugs among both Chicanos and whites, there is a greater reduction among whites at second legal supervision (41% at first legal supervision in comparison to 28% at second). The percent time committing crime and the number of crime days per month also decrease significantly among both Chicanos and whites (from 48% to 34-35% time and from 10-11 to 7 crimes per month). It would appear that the second legal supervision is more effective than the first in reducing crime among whites. The dollar income from crimes also decreases among both Chicanos and whites.

The third legal supervision period continues to change addicts' behavior. The percent time abstinent from drug use significantly increases among both Chicanos and whites (from 9% to 28% for Chicano and from 18% to 44% for whites). The percent time daily use is reduced significantly among whites (from 45% to 25%) and less drastically among Chicano (from 71% to 53%). The percent time dealing is also reduced among whites. More significant changes are also seen in the percent time committing crime. Although the percent time committing crime increased before third legal supervision among Chicanos, it did not increase among whites and both groups decreased in the 12 months

following entry into third legal supervision. The number of crime days per month and income dollars from crime did not reduce as significantly in comparing the second and third legal supervision periods, but before and after entry into the third legal supervision there is a significant difference. Thus, the third legal supervision period does seem to significantly change the drug using and criminal behavior among whites, who were somewhat resistant to change.

Cross Section cohort

The same general patterns of immediate reduction in drug use and delayed reduction in criminal behavior are found for the Cross Section cohort (See Table 6) for the first legal supervision period. There appears to be a substantial difference, however, in the effect of first legal supervision on whites. Unlike the whites in the Admissions cohort who did not respond to first legal supervision, in terms of reduction of criminal behavior, the whites in the Cross Section cohort show more changes than the Chicanos. For example, percent time abstinent increases from 8% to 16% among Chicanos and from 12% to 24% among whites. Percent time daily use decreases from 79% to 55% among Chicanos and from 74% to 50% among whites. The percent time crime is lower among whites (28%) and decreased 10% from the 12 months before first legal supervision. The number of crime days per month and the dollar income from criminal behavior are also reduced among both Chicano and whites during the 12 months after entry into first legal supervision.

Similar patterns are found for the 12 months before and after entry into second legal supervision. Again, there appears to be a greater reduction in drug use and criminal behavior among whites than among Chicanos. Percent time abstinent increases from 10% to 23% among Chicanos and from 16% to 34% among whites whereas percent time daily drug use decreases from 68% to 47% among Chicanos and from 68% to 38% among whites. In comparison to before and after entry into first legal supervision, the percent time committing crime and the number of crime days per month are higher, but still have been reduced by the legal supervision. This can be explained by the fact that the two samples differ. Only those who needed a second legal supervision period are included in the second analysis. These addicts are probably those who had more severe drug problems or more serious criminal histories to begin with. Percent time crime is reduced from 45% to 35% among Chicanos and from 49% to 25% among whites.

The sample size for third legal supervision in the Cross Section cohort is quite small (5 Chicano and 17 whites). Therefore, many of the analyses show no significant difference between the two time periods. Most interesting, however, is the difference in percent time committing crime before and after entry into third legal supervision. Among whites there is a reduction from 71% to 7% and among Chicanos from 36% to 14%. The number of crime days per month and dollar income from crime show the same trend.

D. EFFECTS OF DIFFERENT TYPES OF LEGAL SUPERVISION

Repeated Measures ANOVAs were also used to test the effectiveness of different types of supervision on drug use and criminal behavior. Three levels of legal supervision are used in the analyses: supervision versus no supervision, supervision with urine testing versus supervision without testing, other

supervision with testing versus Outpatient Status (OPS) with testing. Periods of legal supervision with testing are further broken down into low and high testing (low being one or two times per month and high being three or more times per month). The results of these analyses are shown below in Figures 3-13.

Admissions Cohort

As shown in the previous analyses, legal supervision has an important effect on drug use. There is a 10% difference in the percent time abstinent during periods of supervision, in comparison to periods of no supervision (Chicanos increase from 10% to 19% and whites from 13% to 22%). As hypothesized, the addition of urine testing to legal supervision produces significant results among whites, increasing percent time abstinent to 26%, but does not greatly effect Chicanos. There appears to be little difference between OPS supervision with testing versus other supervision with testing. Among whites, in fact, percent time abstinent is higher during those time periods not on OPS than those time periods on OPS (21% versus 13%).

The effects of high and low levels of testing are more problematic to analyze because the number of tests per month are determined by the parole or probation officer who determines the need to control the subject. High testing is associated with increased percent time abstinent among Chicanos for all types of legal supervision with the exception of non-OPS supervision with testing. Among whites high testing is also associated with a higher level of percent time abstinent than when testing is low. The largest difference seems to be among Chicanos on Outpatient Status, for whom high levels of urine testing are more effective.

The patterns for percent time abstinent from drug use are paralleled, in some respects, for percent time daily drug use. Among both Chicanos and whites, during periods of supervision and testing the percent time daily drug use is much lower than during periods of no supervision or no testing (differences of about 20%). There is less difference between Outpatient status with testing versus other supervision with testing (10% among Chicanos and 4% among whites). The results for high versus low testing are different between Chicanos and whites. Regardless of type of supervision, during periods of higher levels of testing the percent time daily drug use is lower than during periods of low testing among Chicanos, however, the reverse is true among whites whose percent time daily drug use is higher during periods of high testing. One explanation of this finding may be that urine testing is a marker for high levels of daily drug use. In other words, those who are most deserving of increased number of urine tests per month are those addicts using daily.

The type and level of legal supervision appear to have less impact on drug dealing. Among Chicanos, there is very little difference in percent time dealing drugs during different types of supervision, but there is a small difference between supervision and no supervision (58% to 48%). In comparison, among whites, testing produces the greatest reduction in drug dealing (45% to 34%), but the level of urine testing has the opposite effect. During time periods of high testing there is a greater percent time dealing drugs than during time periods of low testing.

Criminal behavior is also affected by the different types of legal supervision. There are substantial differences in the number of crimes committed between periods of supervision and no supervision (Chicanos 9 vs. 7, whites 9 vs. 8) testing and no testing (Chicanos 10 vs. 8, whites 11 vs. 7), and outpatient versus non-outpatient status (Chicanos 10 vs. 6, whites 9 vs. 7). Among Chicanos, the greatest difference is between outpatient status and non-outpatient status. Among whites, testing versus no testing makes more of a difference than supervision or OPS. In comparing levels of testing, there are small differences in the number of crimes committed during periods of low testing versus high testing for all types of supervision. However, among whites the patterns are opposite the expected direction; higher levels of testing do not produce the reduction in number of crimes among whites.

Cross Section Cohort

The results of repeated measures ANOVAs testing the effects of different levels of legal supervision on drug use and criminal behavior are very similar for the Cross Section cohort as for the Admissions cohort. There are some differences, however, which appear to be related to sample selection.

In testing the effects of legal supervision on percent time abstinent there are greater differences among Chicanos than among whites. For example, there is a 10% difference between testing and no testing among Chicanos and a very small difference among whites (4%). As was found for the Admissions cohort, in the Cross Section cohort there is an opposite effect for low versus high levels of testing on percent time abstinent among whites. Whether the condition is just testing, OPS or no OPS, higher percentages of percent time abstinent are reported for lower levels of testing among whites. However, for low versus high levels of testing among both Chicanos and whites the percent time daily use is opposite what is expected, being higher for lower levels of testing. During periods of legal supervision Chicanos report 58% time daily drug use, whereas when not supervised, they report 74% time daily drug use. Similarly, for periods of testing versus no testing Chicanos report 58% and 83% daily drug use respectively. Among whites the results are quite similar, with 55% daily drug use while supervised in comparison to 68% daily drug use when not supervised. There is a 20% difference in daily drug use among whites in comparing testing to no testing conditions. However, among both Chicanos and whites the percent time daily drug use is slightly higher during periods of low testing than periods of high testing.

Chicanos in the Cross Section cohort do not appear to respond to supervision and testing in quite the same manner as Chicanos in the Admissions cohort. Although there is a lower reported percent time dealing drugs when under supervision, in comparison to time not under supervision, for all other types of legal supervision the percent time dealing drugs is higher for high levels of testing than low levels of testing. Dealing may be more economically entrenched in the Chicano's lifestyle. Among whites there is no consistent pattern, however legal supervision and testing do appear to decrease the percent time dealing drugs, yet the level of testing has a differential impact depending on the type of legal supervision.

Similar results are shown for the number of crime days per month and the percent time committing crime. For both Chicanos and whites, there is a reduction in the number of crime days per month during periods of supervision

versus no supervision, testing versus no testing and OPS versus no OPS. However, in comparing low and high levels of testing, there appears to be a tendency for a higher number of crime days during periods of high testing versus low testing.

IV. DISCUSSION AND CONCLUSIONS

The results of three sets of analyses to examine the effects of legal supervision on narcotic addiction and criminal behavior among a sample of methadone maintenance patients have shown that legal supervision is effective in reducing both daily drug use and percent time committing crime. The data also support our hypothesis that supervision with urine testing is more effective than supervision without testing. However, the results did not support the hypothesis that higher levels of testing would produce higher levels of conformity and lower levels of drug use and criminal behavior. Furthermore, the analyses indicate that there are substantial differences between Chicanos and whites in the effect of legal supervision and that these differences vary with other factors related to the selection of the sample.

In the set of analyses examining the effects of first and second legal supervision it was shown that while there is a significant reduction in percent time daily drug use and percent time committing crime during the first or second legal supervision period, addicts rebound following discharge from legal supervision to levels of narcotics use and criminal behavior higher than during supervision. Nonetheless, legal supervision appears to be effective in general, as successive periods of legal supervision reduce narcotics use and criminal behavior. It may be that the greater effect of subsequent legal supervision periods may be due either to the addition of urine testing or methadone maintenance, or the "maturing out" of the addict over the career. Both of these possibilities need to be tested in further research.

The second set of analyses further clarified the relationship between legal supervision, narcotic addiction, and criminal behavior. The results confirmed the earlier analyses showing immediate and cumulative effects of legal supervision. However, these analyses do not answer the question of the deterioration of these effects during the legal supervision period. Further analyses are needed to test the time period 12 months prior to discharge from first, second, and third legal supervision with the time period 12 months post discharge from legal supervision.

The final set of analyses tested the impact of different types of legal supervision on narcotic addiction and crime. These analyses differ from the first two sets in that the total addiction career is examined without regard to successive periods of supervision. This may tend to decrease the overall effect of supervision as it averages out the effect of first and subsequent legal supervision periods. At a later point, time series analyses will be used to disentangle the effects of different types of legal supervision at different times within the addict career.

The results of the present study are generally supportive of earlier research on the effect of legal supervision of narcotic addiction and crime. In both studies results indicate OPS supervision with testing is most effective in reducing percent time daily drug use. Although the present study of

admissions to methadone maintenance treatment programs² shows trends similar to those found by McGlothlin, Anglin, and Wilson (1977), there are also substantial differences. For example, in the Admissions cohort percent time daily drug use was reduced from 75% to 57% among Chicanos and 71% to 53% among whites by supervision alone and further reduced to 53% among Chicanos and 48% among whites under supervision with testing. In the Cross Section cohort percent time daily drug use was reduced from 74% to 58% under supervision with testing among Chicanos and from 65% to 50% among whites. In comparison, prior to entry into the CAP, subjects in the early CAP study (McGlothlin, Anglin and Wilson, 1977) reported 50% time daily use and after entry into the CAP subjects reported 28% daily narcotics use during periods of no supervision, 16% time daily use on OPS with testing and 21% time daily use on other supervision with testing. It would seem that, while the magnitude of the effects is greater among subjects in the present study than in the early CAP study (differences of almost 20% in comparison to 10%), the levels of narcotics use are generally higher in the later study.

The percent time involved in criminal activity was also reduced in both studies. In the present study the effect of supervision with testing on criminal activity is to reduce the percent time crime from 44% to 37% among Chicanos in the Admissions cohort and from 51% to 35% among whites, from 54% to 38% in the Cross Section cohort Chicanos and from 34% to 29% among whites. In the early CAP study percent time committing crime decreased from 40% time prior to entry into CAP to 25% time under no supervision, 17% under OPS with testing, and 23% under other supervision with testing. The reduction in criminal activity appears to be greater for the early CAP program than for the present study. Given these results, it is unclear whether the effects of the civil commitment procedure of the CAP program combined with intensive supervision of OPS with urine testing are more effective than methadone maintenance. Consequently, further research is necessary to determine if the availability of methadone maintenance substantially improves on the outcome from parole supervision alone or if the addition of legal supervision produces marginal improvement over that which would have resulted from methadone maintenance alone.

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² One-half of the Admissions cohort were committed to the CAP at some time during the addiction career.

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TABLE 1

BACKGROUND VARIABLES

| | Admissions | | | | Cross Section | | | |
|---------------------|------------|-------|-------|-------|---------------|-------|-------|-------|
| | Chicano | | White | | Chicano | | White | |
| | Z | N | Z | N | Z | N | Z | N |
| <u>Mean Age</u> | | | | | | | | |
| First narcotics use | 18.0 | (160) | 18.6 | (119) | 19.0 | (141) | 19.5 | (251) |
| Addiction | 19.8 | (160) | 20.5 | (119) | 21.3 | (141) | 20.8 | (251) |
| LS1 | 23.1 | (158) | 23.0 | (114) | 24.6 | (120) | 22.8 | (192) |
| LSD1 | 28.1 | (158) | 28.1 | (114) | 29.2 | (120) | 26.5 | (192) |
| LS2 | 29.7 | (93) | 28.3 | (60) | 31.6 | (50) | 26.7 | (76) |
| LSD2 | 34.5 | (93) | 33.4 | (60) | 36.0 | (50) | 29.6 | (76) |
| LS3 | 35.8 | (29) | 33.5 | (21) | 31.4 | (5) | 29.0 | (17) |
| LSD3 | 39.8 | (29) | 37.5 | (21) | 38.3 | (5) | 31.5 | (17) |

TABLE 2

CHARACTERISTICS OF LEGAL SUPERVISION PERIODS

First Legal Supervision

| | Admissions | | Cross Section | |
|--------------------------|--------------|------------|---------------|------------|
| | Chicano (93) | White (77) | Chicano (59) | White (99) |
| <i>Mean Percent Time</i> | | | | |
| Duration (avg. mos.) | 59.0 | 64.3 | 58.5 | 41.5 |
| Incarcerated | 19.9 | 23.3 | 19.9 | 11.8 |
| Any Supv. w/ Testing | 22.8 | 26.2 | 48.8 | 46.2 |
| Parole | 12.6 | 10.8 | 25.3 | 9.6 |
| Probation | 24.8 | 35.1 | 43.7 | 66.6 |
| OPS | 35.5 | 28.7 | 17.8 | 13.4 |
| Abscondence | 17.6 | 13.9 | 7.2 | 5.7 |

Second Legal Supervision

| | Admissions | | Cross Section | |
|--------------------------|--------------|------------|---------------|------------|
| | Chicano (36) | White (31) | Chicano (20) | White (22) |
| <i>Mean Percent Time</i> | | | | |
| Duration (avg. mos.) | 62.5 | 55.0 | 54.0 | 29.2 |
| Incarcerated | 22.3 | 25.7 | 11.3 | 8.7 |
| Any Supv. w/ Testing | 30.8 | 21.2 | 61.7 | 49.0 |
| Parole | 20.6 | 7.9 | 25.4 | 16.8 |
| Probation | 21.3 | 26.0 | 46.7 | 72.8 |
| OPS | 36.4 | 36.0 | 24.5 | 9.9 |
| Abscondence | 20.4 | 29.3 | 3.4 | 0.5 |

TABLE 3

Admissions Cohort

Pre, during, and Post First Legal Supervision

| Chicano (N=93) | FDU-LS1 | LS1-LSD1 | LSD1+12 | Pr> F |
|------------------------------|---------|----------|---------|-------|
| Percent Nonincarcerated Time | | | | |
| Drug Use | | | | |
| Abstinent | 3.8 | 26.5 | 18.9 | .0001 |
| Daily | 89.3 | 45.6 | 50.8 | .0001 |
| Dealing | 62.7 | 35.1 | 42.1 | .0001 |
| Crime | 44.6 | 29.5 | 33.7 | .001 |
| No. Crime Days/mo. | 9.2 | 6.0 | 7.2 | .02 |
| Crime Income/mo. | 523.7 | 405.7 | 442.8 | .NS |
| White (N=77) | | | | |
| Percent Nonincarcerated Time | | | | |
| Drug Use | | | | |
| Abstinent | 5.5 | 27.0 | 32.4 | .0001 |
| Daily | 86.3 | 48.2 | 43.1 | .0001 |
| Dealing | 53.5 | 35.6 | 30.0 | .0001 |
| Crime | 38.0 | 37.7 | 25.7 | .02 |
| No. Crime Days/mo. | 7.9 | 7.6 | 6.1 | .NS |
| Crime Income/mo. | 613.2 | 815.4 | 682.3 | .NS |

Pre, during, and Post First and Second Legal Supervision

| Chicano (N=36) | FDU-LS1 | LS1-LSD1 | LSD1-LS2 | LS2-LSD2 | POST LSD2 | Pr>F |
|------------------------------|---------|----------|----------|----------|-----------|-------|
| Percent Nonincarcerated Time | | | | | | |
| Drug Use | | | | | | |
| Abstinent | 4.3 | 25.1 | 10.6 | 25.8 | 29.3 | .001 |
| Daily | 90.2 | 58.6 | 77.6 | 36.0 | 38.0 | .0001 |
| Dealing | 53.2 | 33.4 | 62.8 | 50.8 | 52.4 | .005 |
| Crime | 40.1 | 35.9 | 45.7 | 26.5 | 21.7 | .0008 |
| No. Crime Days/mo. | 7.6 | 7.7 | 9.7 | 5.2 | 5.0 | .05 |
| Crime Income/mo. | 366.8 | 456.4 | 663.8 | 381.2 | 373.3 | .09 |
| White (N=31) | | | | | | |
| Percent Nonincarcerated Time | | | | | | |
| Drug Use | | | | | | |
| Abstinent | 5.9 | 19.3 | 10.6 | 35.6 | 45.6 | .0001 |
| Daily | 78.7 | 55.2 | 71.0 | 40.3 | 30.1 | .0001 |
| Dealing | 38.0 | 32.9 | 45.6 | 27.5 | 22.1 | .1 |
| Crime | 32.7 | 45.4 | 41.3 | 25.4 | 25.7 | .06 |
| No. Crime Days/mo. | 6.7 | 9.0 | 8.6 | 5.2 | 6.1 | .NS |
| Crime Income/mo. | 455.4 | 1046.7 | 940.8 | 751.3 | 985.6 | .NS |

TABLE 4

Cross Section Cohort

Pre, during and Post First Legal Supervision

| Chicano (N=59) | FDU-LS1 | LS1-LSD1 | LSD1+12 | Pr> F |
|------------------------------|---------|----------|---------|-------|
| Percent Nonincarcerated Time | | | | |
| Drug Use | | | | |
| Abstinent | 5.3 | 20.4 | 22.2 | .0007 |
| Daily | 86.6 | 43.2 | 49.6 | .0001 |
| Dealing | 55.1 | 43.6 | 43.1 | .NS |
| Crime | 43.2 | 25.7 | 18.3 | .0001 |
| No. Crime Days/mo. | 7.2 | 3.9 | 3.3 | .0006 |
| Crime Income/mo. | 596.8 | 340.2 | 214.3 | .008 |
| White (N=99) | | | | |
| Percent Nonincarcerated Time | | | | |
| Drug Use | | | | |
| Abstinent | 7.5 | 23.0 | 31.8 | .0001 |
| Daily | 85.3 | 46.8 | 38.7 | .0001 |
| Dealing | 63.4 | 44.1 | 43.1 | .0001 |
| Crime | 38.0 | 23.6 | 26.7 | .004 |
| No. Crime Days/mo. | 7.5 | 4.3 | 5.2 | .01 |
| Crime Income/mo. | 566.3 | 549.0 | 702.4 | .02 |

Pre, during and Post First and Second Legal Supervision

| Chicano (N=20) | FDU-LS1 | LS1-LSD1 | LSD1-LS2 | LS2-LSD2 | POST LSD2 | Pr>F |
|------------------------------|---------|----------|----------|----------|-----------|-------|
| Percent Nonincarcerated Time | | | | | | |
| Drug Use | | | | | | |
| Abstinent | 4.1 | 4.8 | 9.5 | 26.4 | 39.9 | .0001 |
| Daily | 88.7 | 56.0 | 69.9 | 29.7 | 30.1 | .0001 |
| Dealing | 35.8 | 33.5 | 54.8 | 45.4 | 36.0 | .NS |
| Crime | 54.3 | 55.3 | 33.2 | 20.1 | 19.9 | .0001 |
| No. Crime Days/mo. | 7.4 | 9.4 | 7.2 | 4.0 | 3.8 | .07 |
| Crime Income/mo. | 814.5 | 815.1 | 504.8 | 204.8 | 212.9 | .1 |
| White (N=22) | | | | | | |
| Percent Nonincarcerated Time | | | | | | |
| Drug Use | | | | | | |
| Abstinent | 5.0 | 23.4 | 18.5 | 44.6 | 52.8 | .0001 |
| Daily | 88.9 | 54.6 | 61.9 | 27.2 | 31.4 | .0001 |
| Dealing | 48.0 | 36.9 | 58.9 | 27.6 | 33.8 | .02 |
| Crime | 42.2 | 31.8 | 46.3 | 12.3 | 18.2 | .002 |
| No. Crime Days/mo. | 6.8 | 7.0 | 9.2 | 2.7 | 2.2 | .007 |
| Crime Income/mo. | 566.8 | 1034.3 | 1050.0 | 638.3 | 411.8 | .NS |

TABLE 5

Admissions Cohort

12 Months Pre-Post First Legal Supervision

| | CHICANO | | WHITE | | pr(F) |
|------------------------------|---------|--------|--------|--------|-------|
| | LS1-12 | LS1+12 | LS1-12 | LS1+12 | |
| Sample size | 108 | | 88 | | |
| Time Periods | LS1-12 | LS1+12 | LS1-12 | LS1+12 | pr(F) |
| Percent Nonincarcerated Time | | | | | |
| Drug Use | | | | | |
| Abstinent | 6.9 | 19.0 | 9.5 | 16.9 | .0001 |
| Daily | 81.5 | 54.8 | 76.0 | 61.3 | .0001 |
| Drug Dealing | 62.8 | 44.2 | 51.5 | 41.2 | .0001 |
| Crime | 47.0 | 35.3 | 39.6 | 43.3 | |
| No. of Crime Days/mo. | 9.6 | 7.1 | 7.9 | 9.1 | |
| Crime Income/mo. | 559.2 | 432.2 | 714.8 | 992.3 | |

12 Months Pre-Post Second Legal Supervision

| | 93 | | 60 | | pr(F) |
|------------------------------|--------|--------|--------|--------|-------|
| | LS2-12 | LS2+12 | LS2-12 | LS2+12 | |
| Sample size | 93 | | 60 | | |
| Time Periods | LS2-12 | LS2+12 | LS2-12 | LS2+12 | pr(F) |
| Percent Nonincarcerated Time | | | | | |
| Drug Use | | | | | |
| Abstinent | 7.8 | 19.3 | 10.1 | 26.3 | .0001 |
| Daily | 77.3 | 50.4 | 69.7 | 42.4 | .0001 |
| Drug Dealing | 60.2 | 46.6 | 41.3 | 28.2 | .0003 |
| Crime | 47.9 | 34.9 | 47.7 | 34.2 | .0002 |
| No. of Crime Days/mo. | 10.8 | 6.8 | 9.5 | 6.6 | .0001 |
| Crime Income/mo. | 965.4 | 472.1 | 1309.3 | 850.9 | .02 |

12 Months Pre-Post Third Legal Supervision

| | 29 | | 21 | | pr(F) |
|------------------------------|--------|--------|--------|--------|-------|
| | LS3-12 | LS3+12 | LS3-12 | LS3+12 | |
| Sample size | 29 | | 21 | | |
| Time Periods | LS3-12 | LS3+12 | LS3-12 | LS3+12 | pr(F) |
| Percent Nonincarcerated Time | | | | | |
| Drug Use | | | | | |
| Abstinent | 9.0 | 28.0 | 18.2 | 43.6 | .0001 |
| Daily | 70.7 | 52.7 | 45.2 | 24.9 | .006 |
| Drug Dealing | 52.8 | 53.9 | 40.1 | 17.0 | |
| Crime | 42.3 | 27.3 | 33.4 | 29.3 | .05 |
| No. of Crime Days/mo. | 9.8 | 6.9 | 8.8 | 6.6 | .08 |
| Crime Income/mo. | 1284.5 | 660.5 | 1156.5 | 601.4 | .01 |

TABLE 6

Cross Section Cohort

12 Months Pre-Post First Legal Supervision

| | CHICANO | | WHITE | | pr(F) |
|------------------------------|---------|--------|--------|--------|-------|
| | LS1-12 | LS1+12 | LS1-12 | LS1+12 | |
| Sample size | 89 | | 139 | | |
| Time Periods | LS1-12 | LS1+12 | LS1-12 | LS1+12 | pr(F) |
| Percent Nonincarcerated Time | | | | | |
| Drug Use | | | | | |
| Abstinent | 7.8 | 15.5 | 12.3 | 23.7 | .0001 |
| Daily | 78.8 | 55.0 | 73.4 | 49.8 | .0001 |
| Drug Dealing | 58.7 | 49.8 | 62.4 | 45.7 | .0001 |
| Crime | 38.2 | 29.5 | 37.7 | 27.6 | .001 |
| No. of Crime Days/mo. | 7.1 | 5.3 | 7.1 | 5.0 | .004 |
| Crime Income/mo. | 651.2 | 461.6 | 624.7 | 483.9 | .06 |

12 Months Pre-Post Second Legal Supervision

| | 50 | | 76 | | pr(F) |
|------------------------------|--------|--------|--------|--------|-------|
| | LS2-12 | LS2+12 | LS2-12 | LS2+12 | |
| Sample size | 50 | | 76 | | |
| Time Periods | LS2-12 | LS2+12 | LS2-12 | LS2+12 | pr(F) |
| Percent Nonincarcerated Time | | | | | |
| Drug Use | | | | | |
| Abstinent | 10.4 | 23.4 | 15.6 | 34.1 | .0001 |
| Daily | 67.7 | 47.4 | 68.2 | 37.9 | .0001 |
| Drug Dealing | 58.6 | 47.7 | 58.6 | 33.6 | .0001 |
| Crime | 44.8 | 35.1 | 43.8 | 25.1 | .0002 |
| No. of Crime Days/mo. | 9.0 | 6.0 | 9.1 | 5.2 | .0002 |
| Crime Income/mo. | 654.3 | 467.3 | 1121.0 | 565.0 | .02 |

12 Months Pre-Post Third Legal Supervision

| | 5 | | 17 | | pr(F) |
|------------------------------|--------|--------|--------|--------|-------|
| | LS3-12 | LS3+12 | LS3-12 | LS3+12 | |
| Sample size | 5 | | 17 | | |
| Time Periods | LS3-12 | LS3+12 | LS3-12 | LS3+12 | pr(F) |
| Percent Nonincarcerated Time | | | | | |
| Drug Use | | | | | |
| Abstinent | 0.0 | 13.3 | 25.6 | 25.2 | |
| Daily | 100.0 | 86.7 | 53.9 | 45.1 | |
| Drug Dealing | 98.9 | 86.7 | 37.3 | 35.8 | |
| Crime | 71.2 | 6.7 | 36.4 | 13.8 | .0001 |
| No. of Crime Days/mo. | 15.9 | 2.0 | 7.6 | 1.1 | .0007 |
| Crime Income/mo. | 815.6 | 50.9 | 1404.9 | 122.0 | .1 |

FIGURE 2

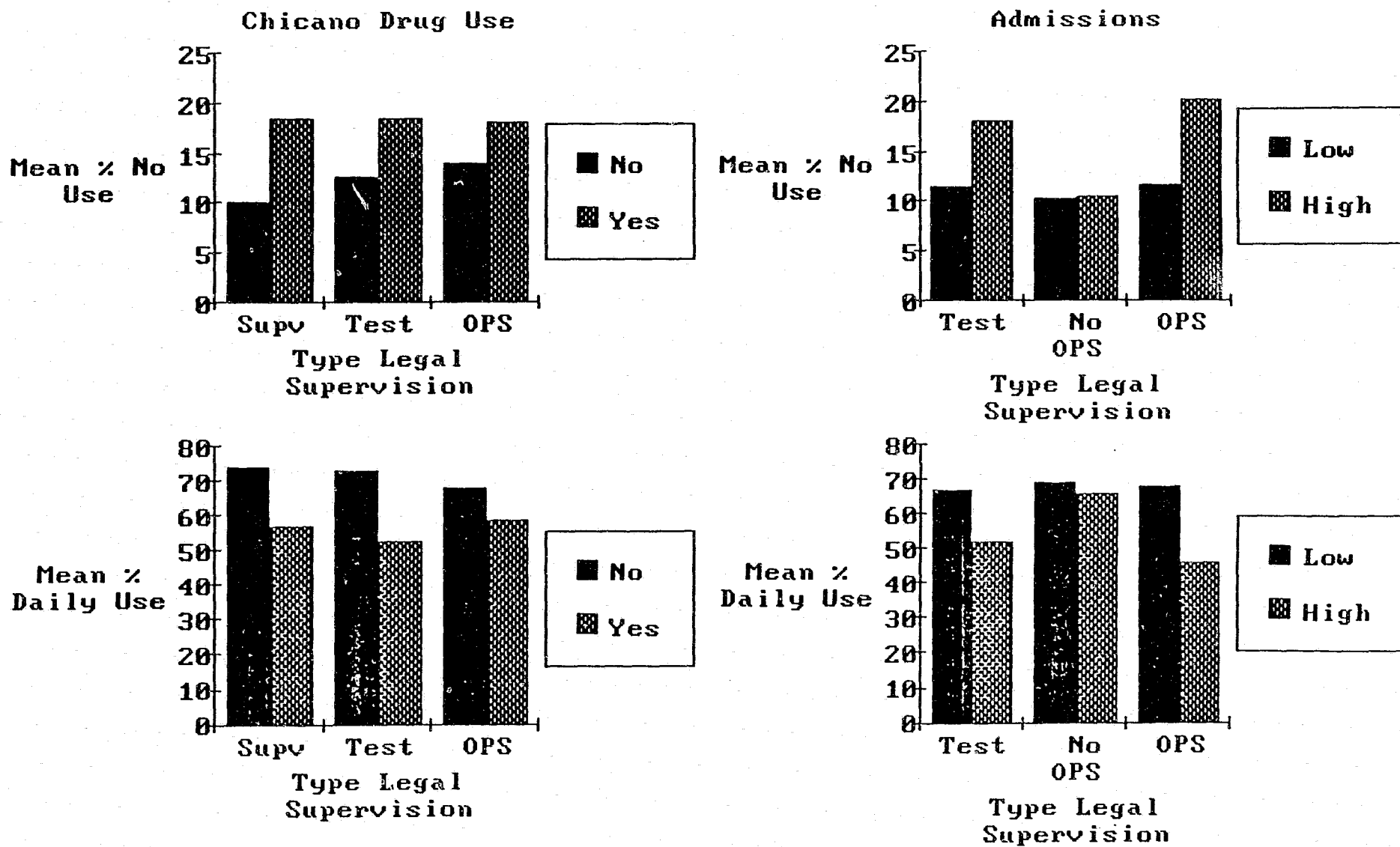


FIGURE 3

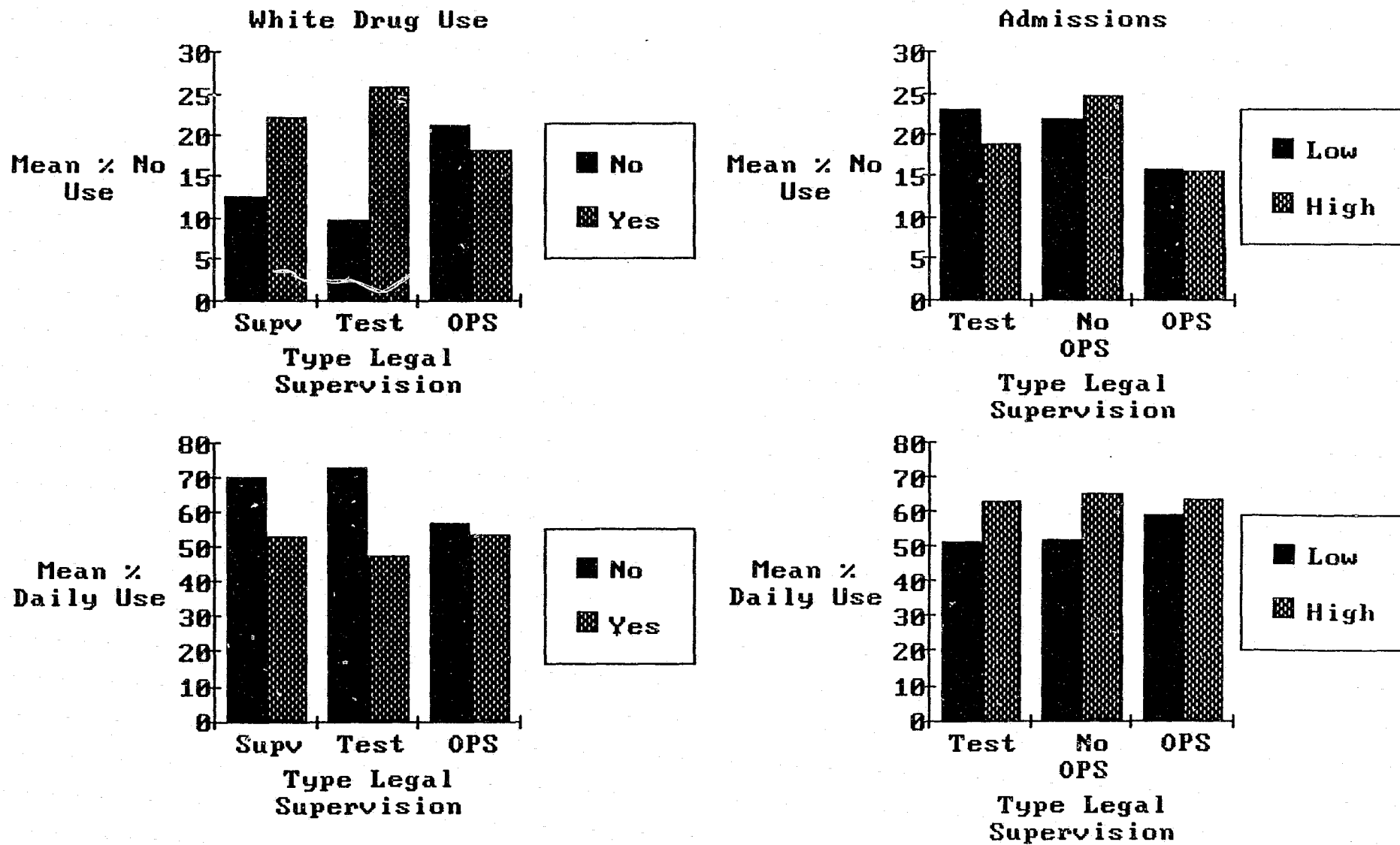


FIGURE 4

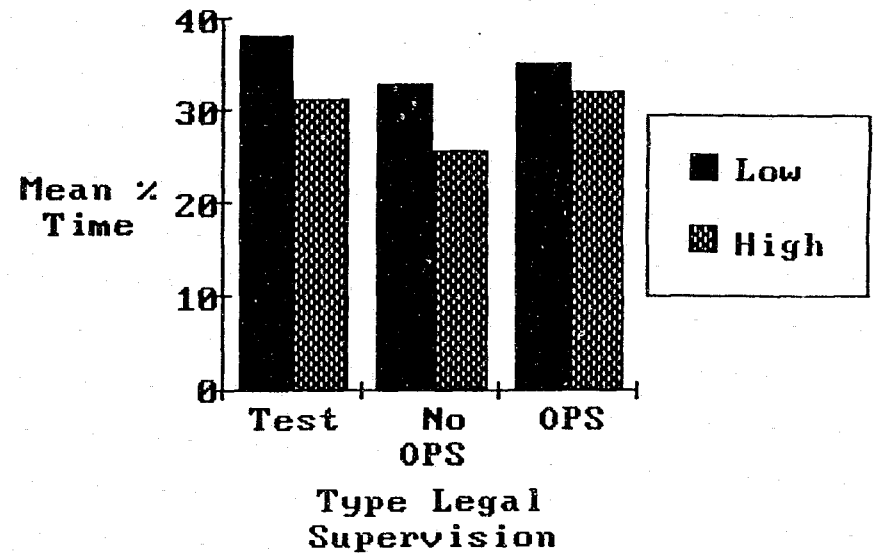
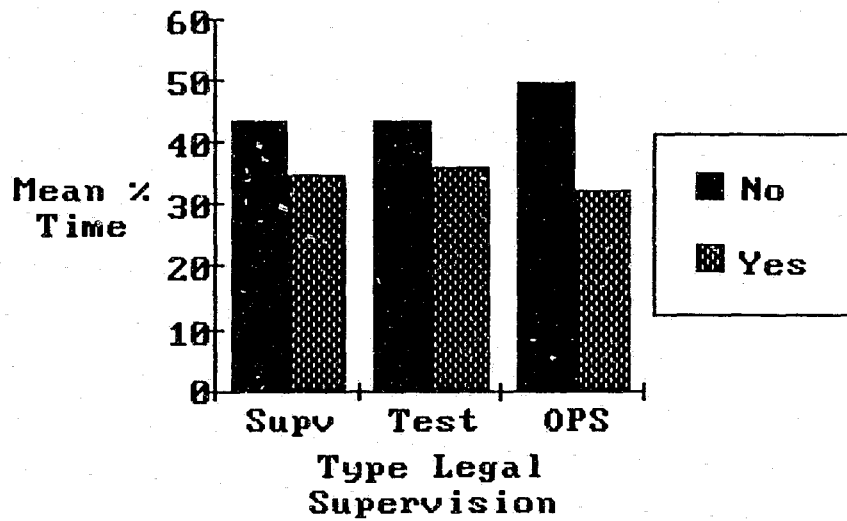
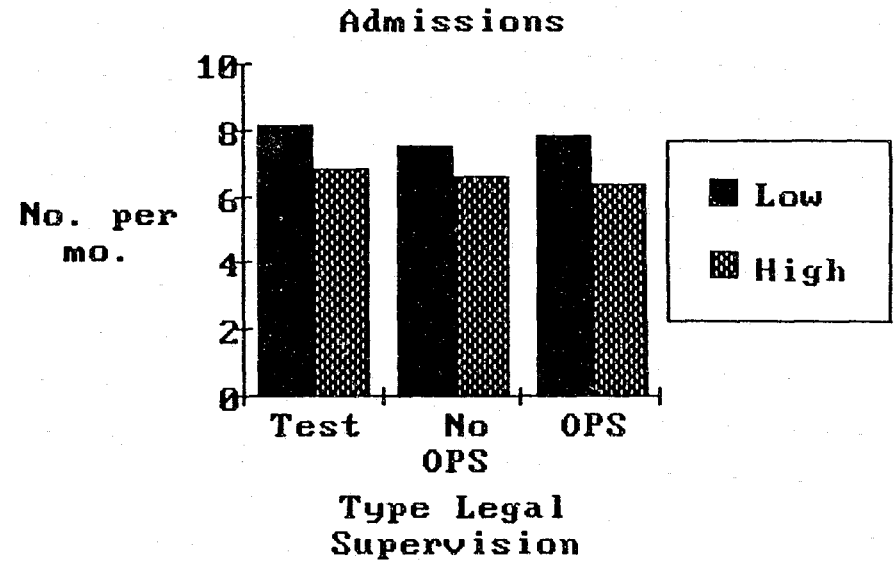
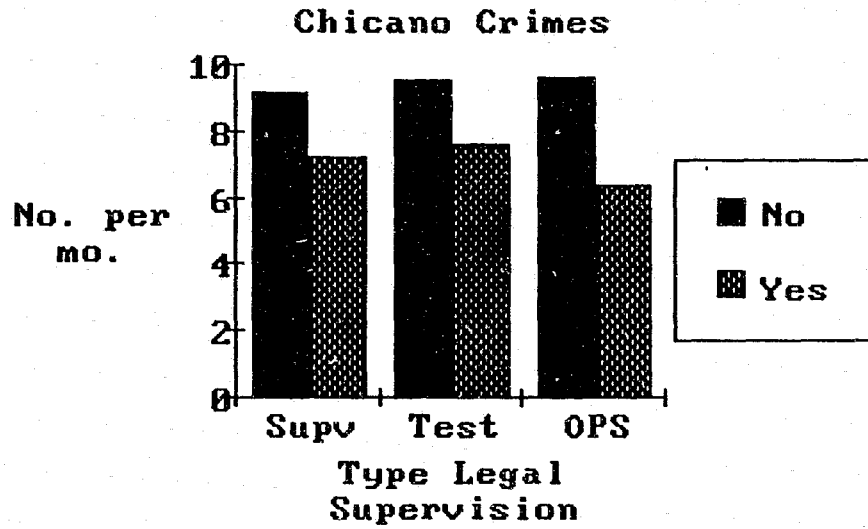


FIGURE 5

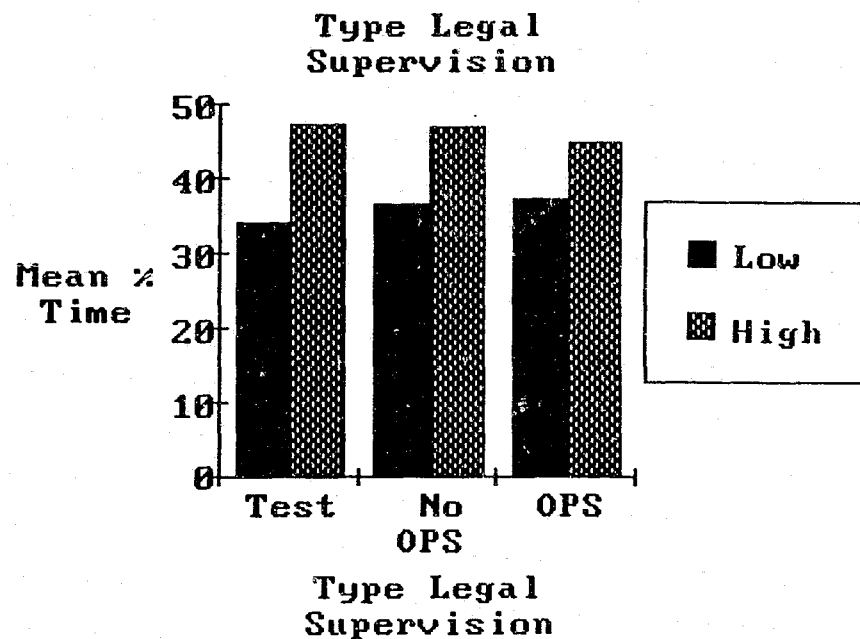
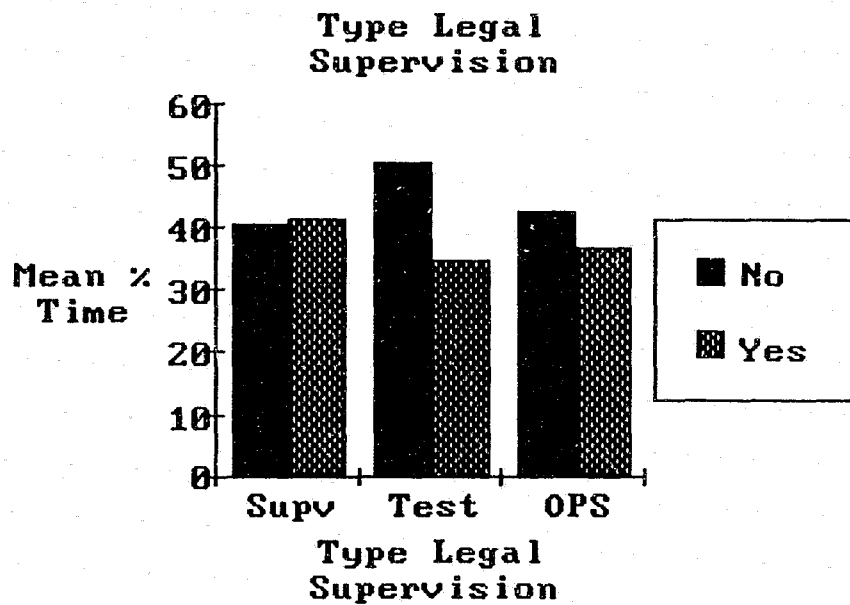
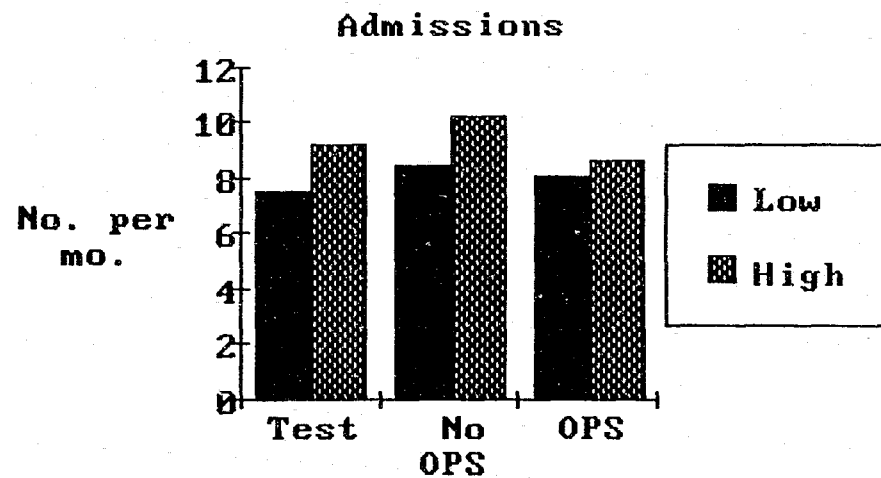
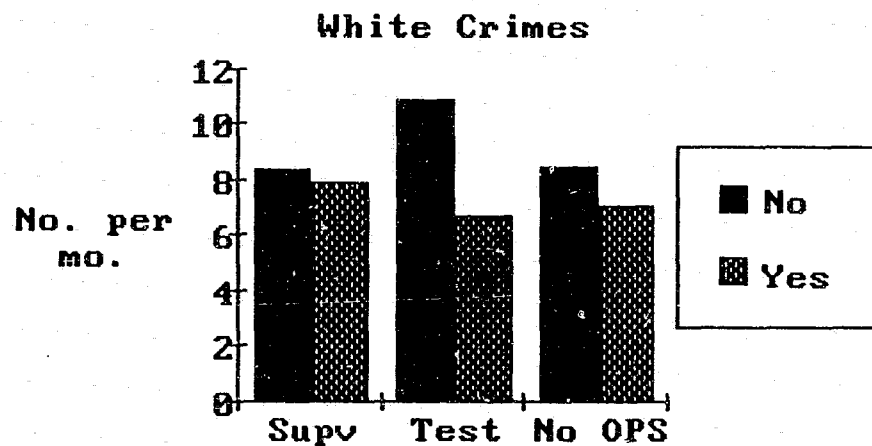


FIGURE 6

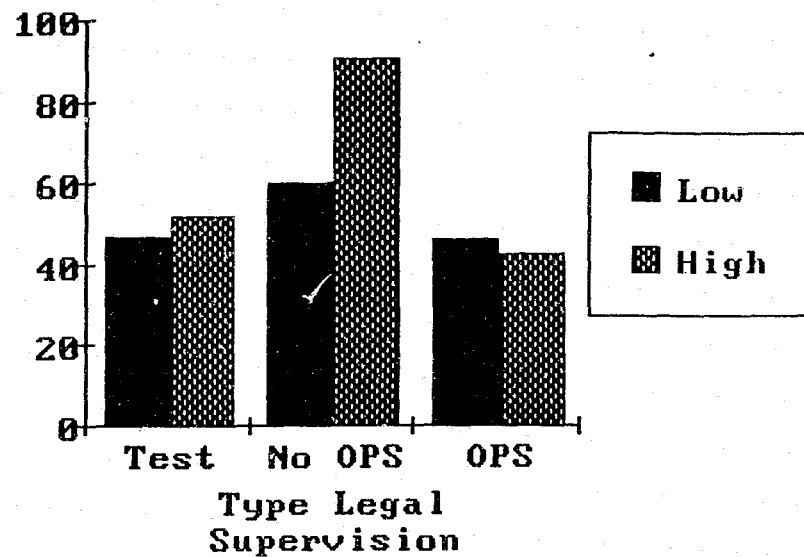
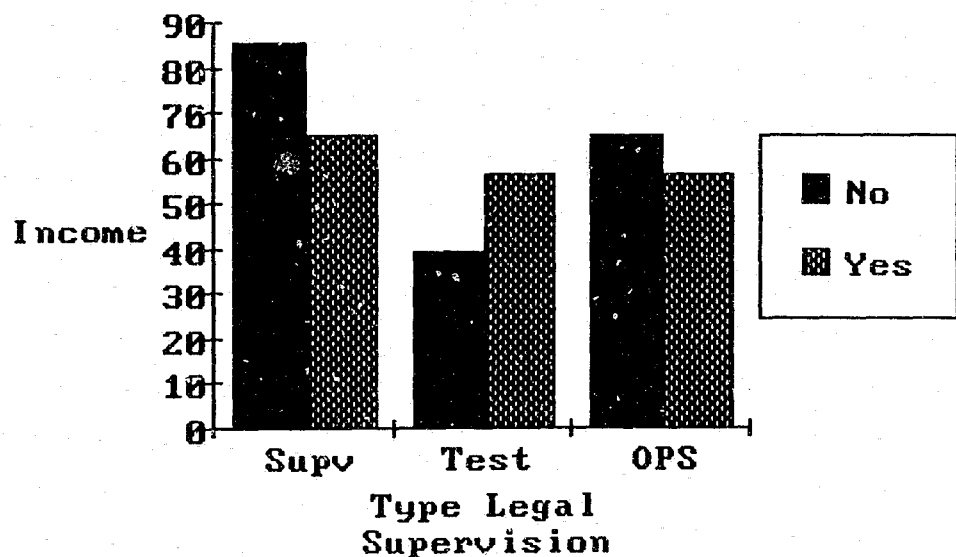
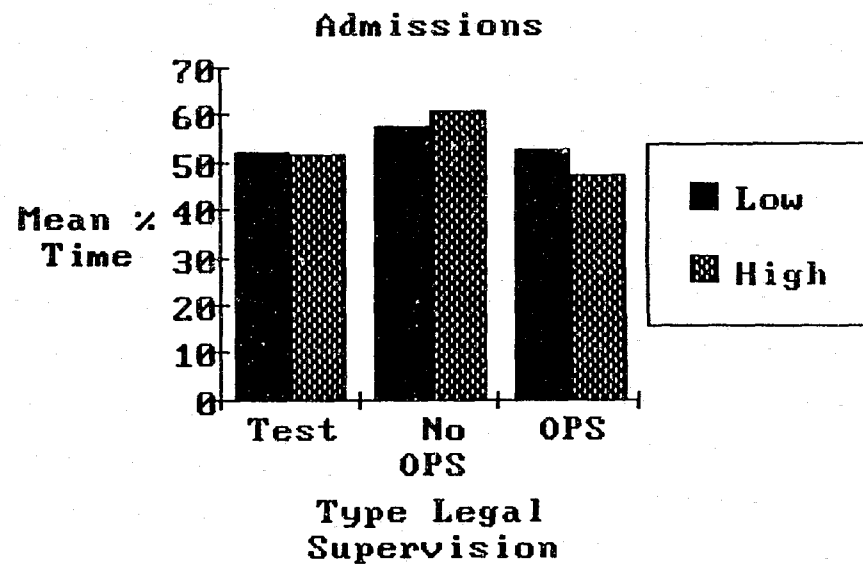
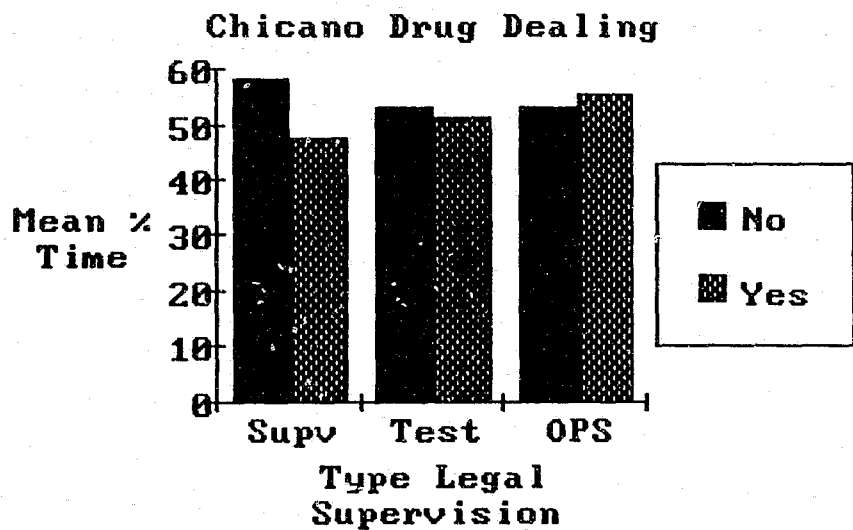


FIGURE 7

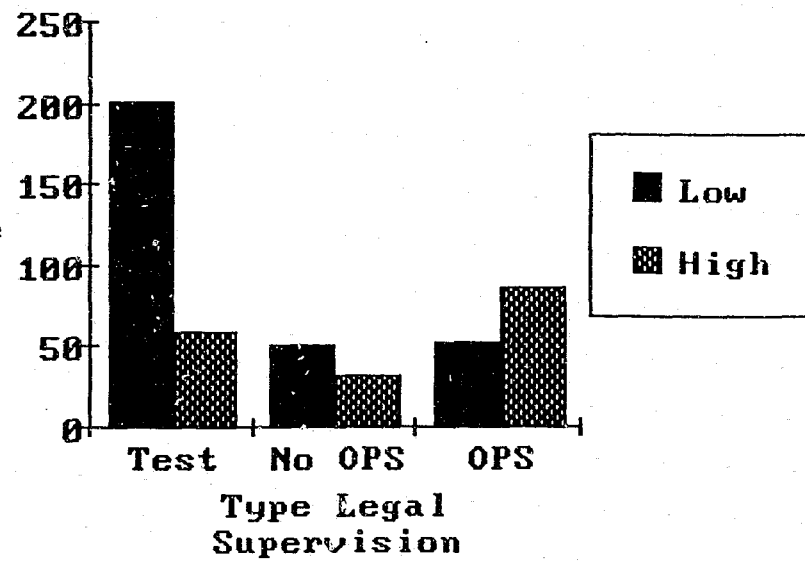
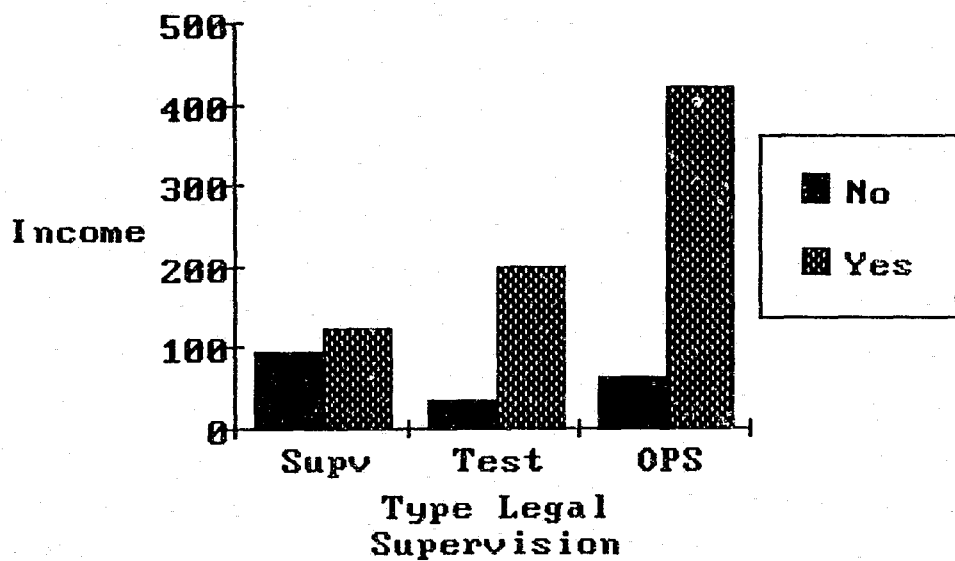
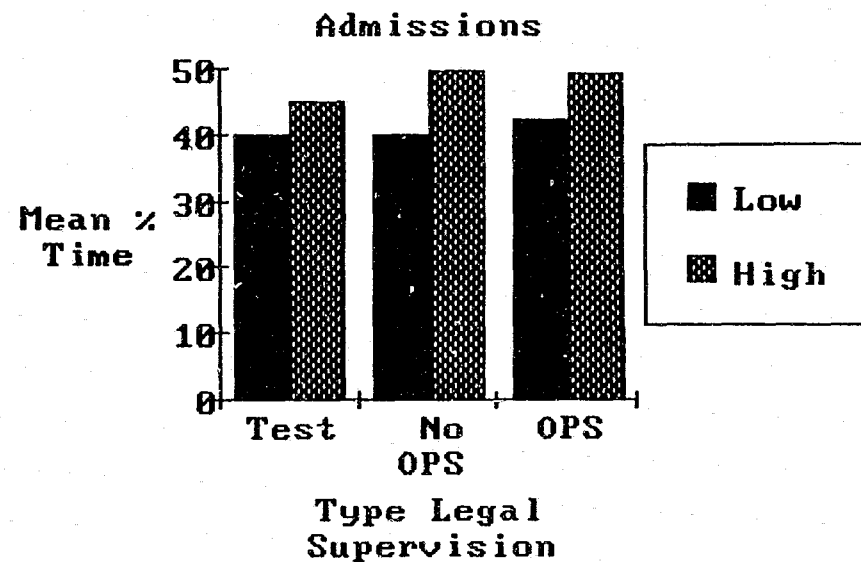
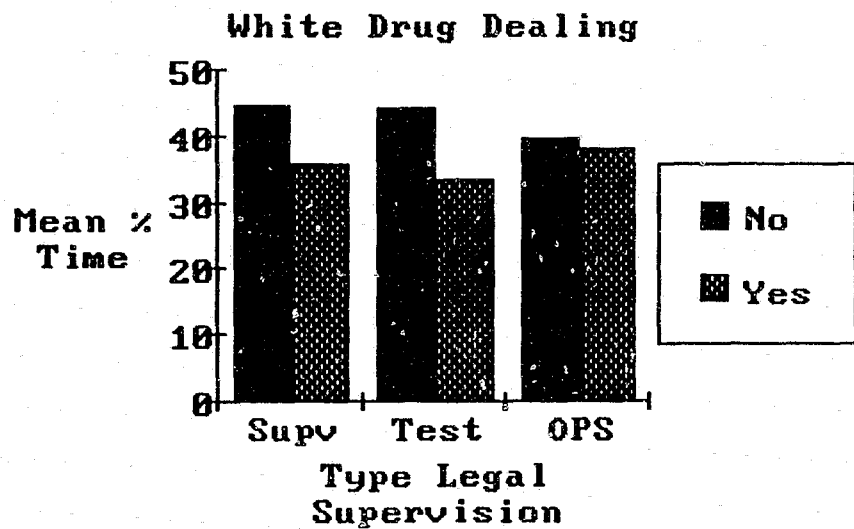


FIGURE 8

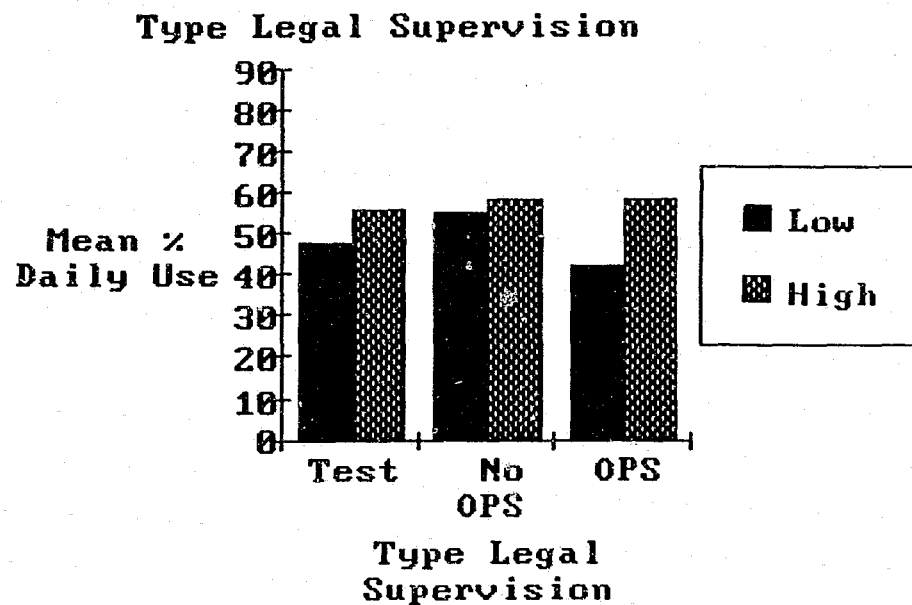
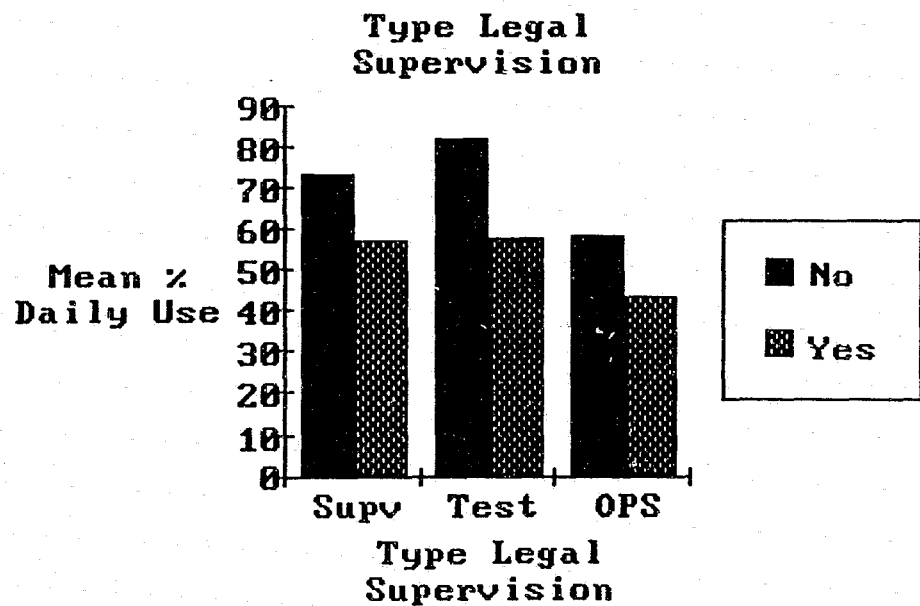
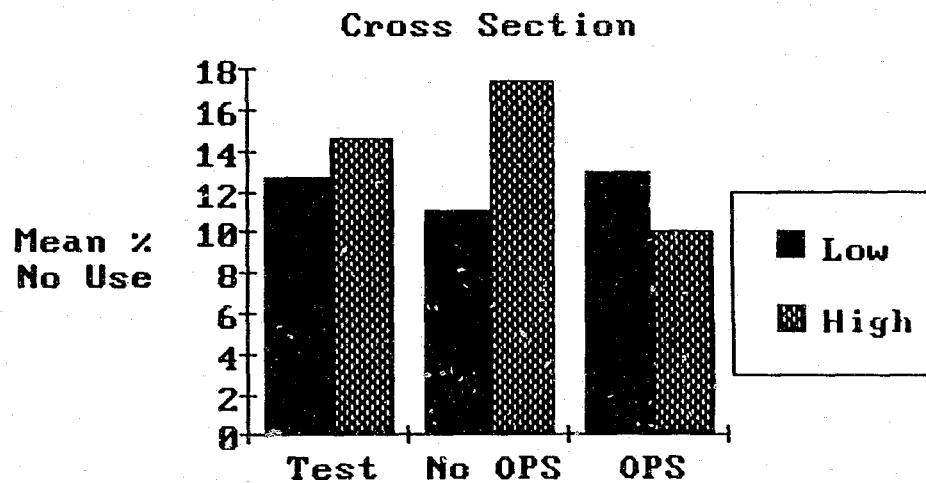
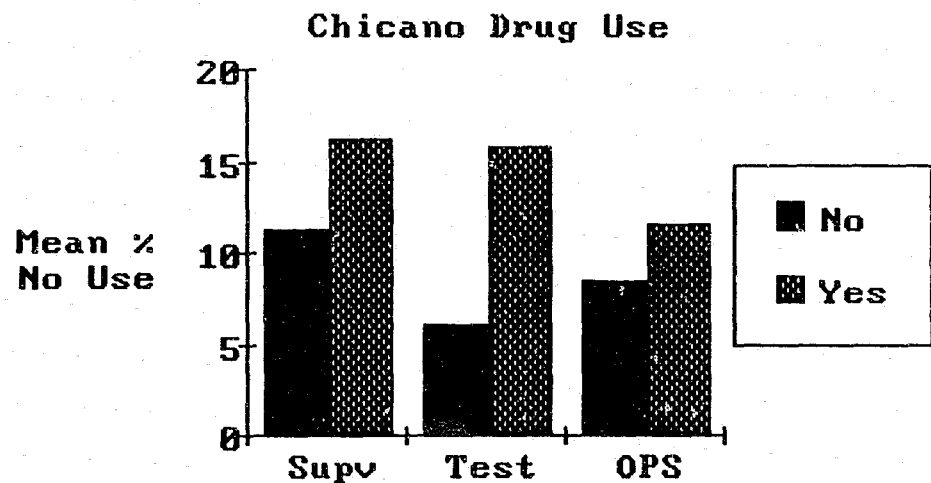


FIGURE 9

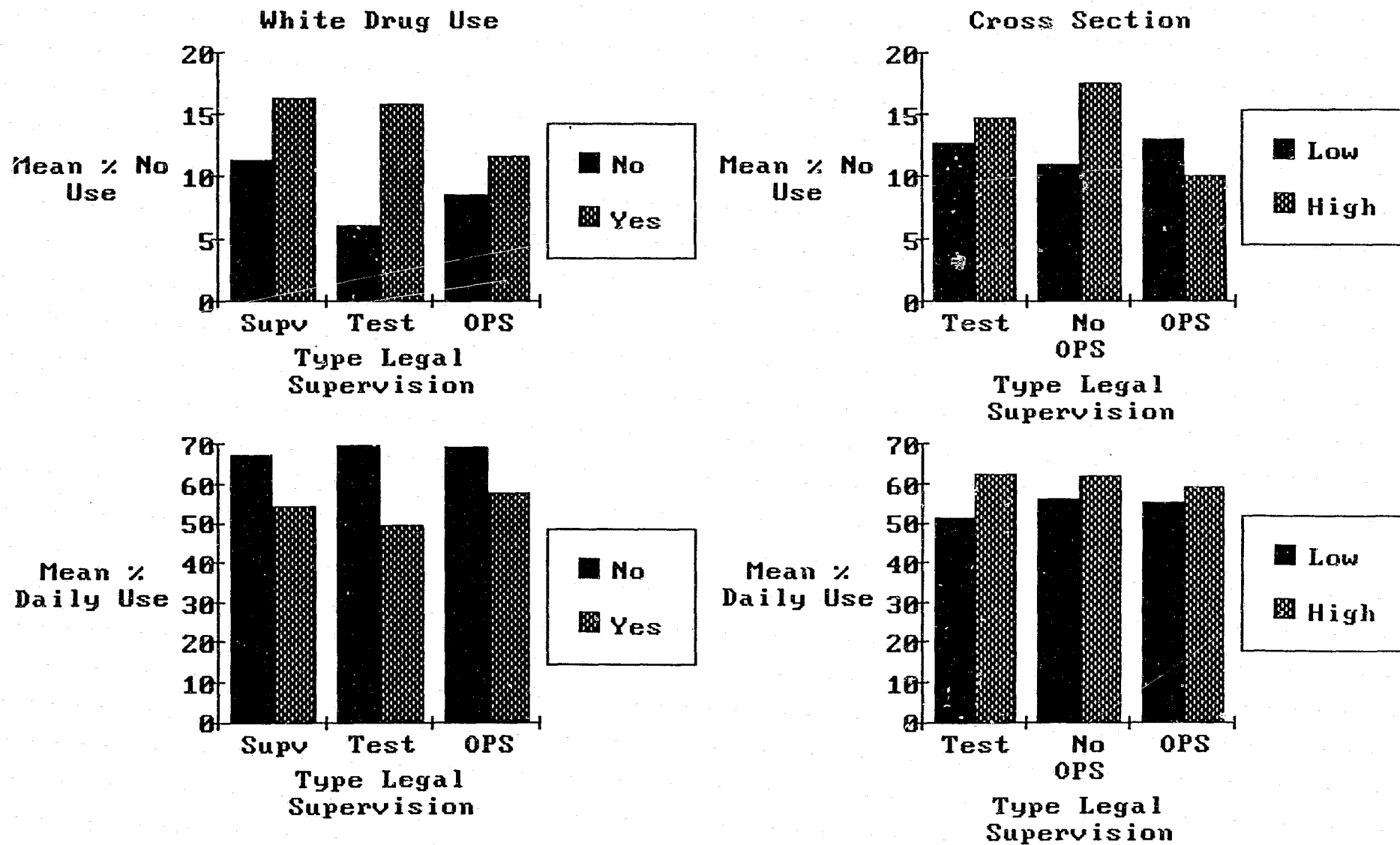


FIGURE 10

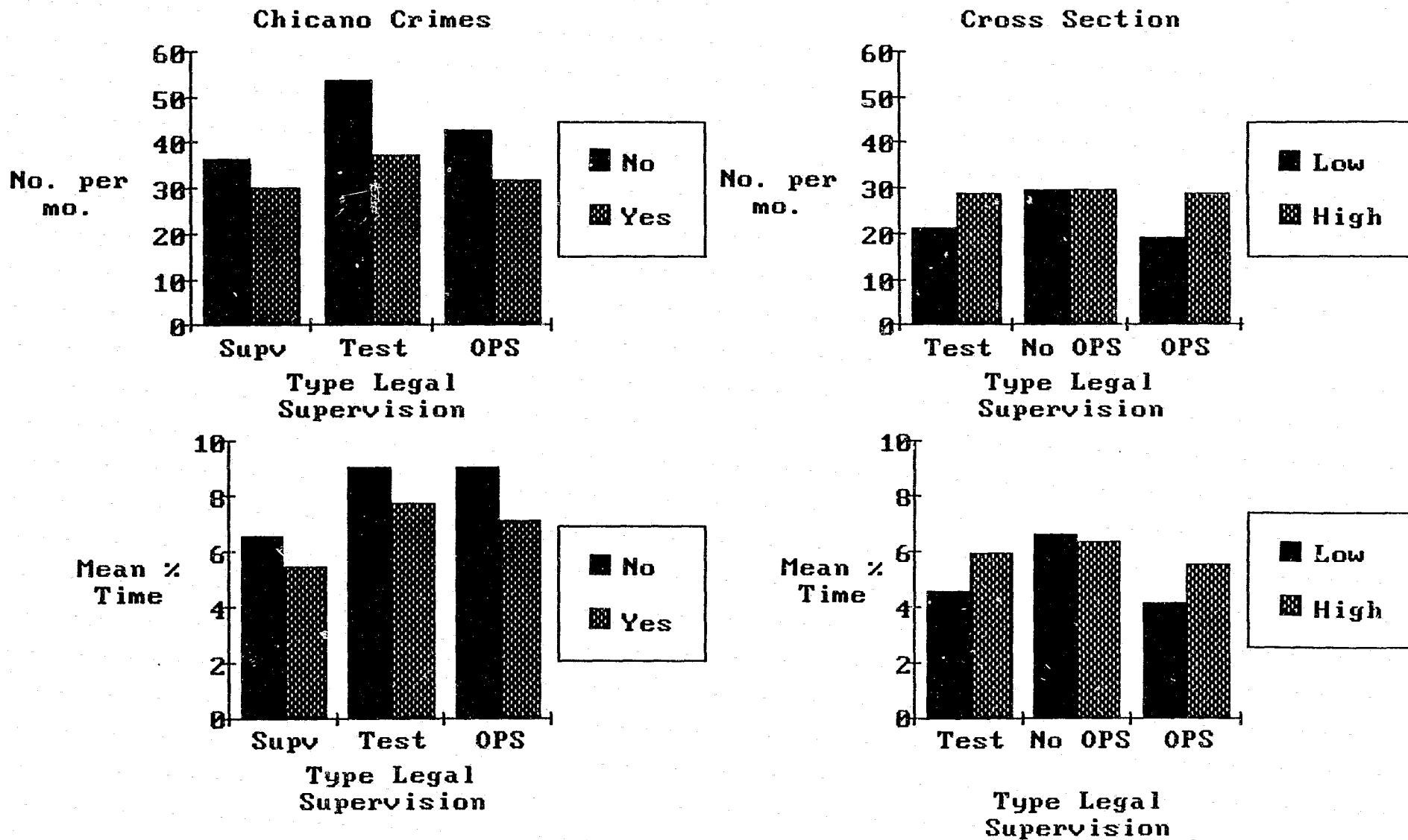


FIGURE 11

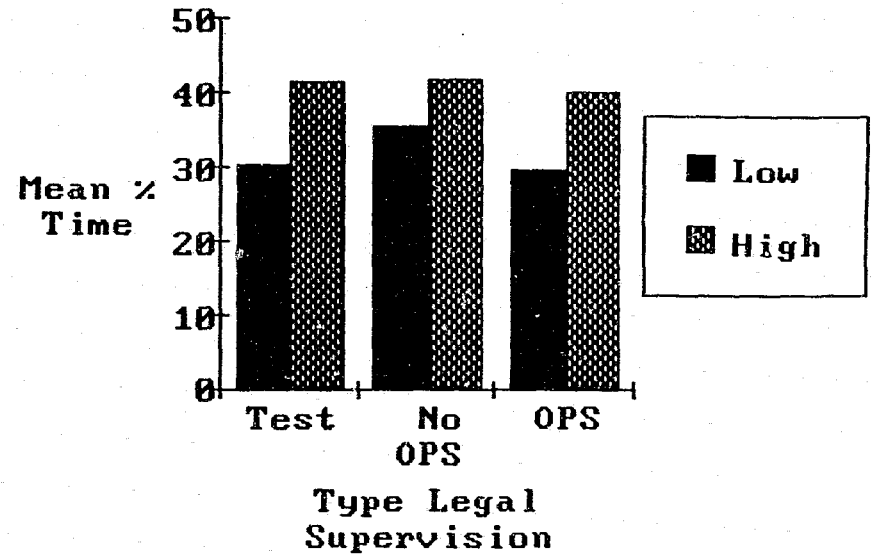
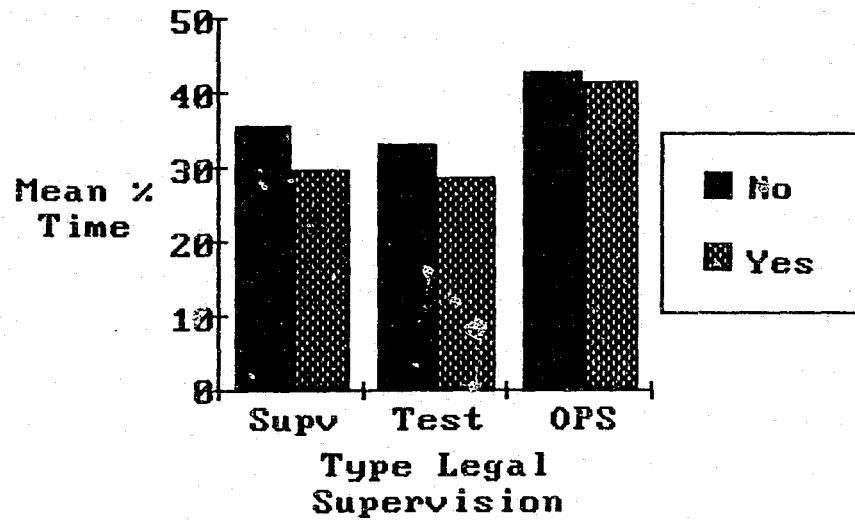
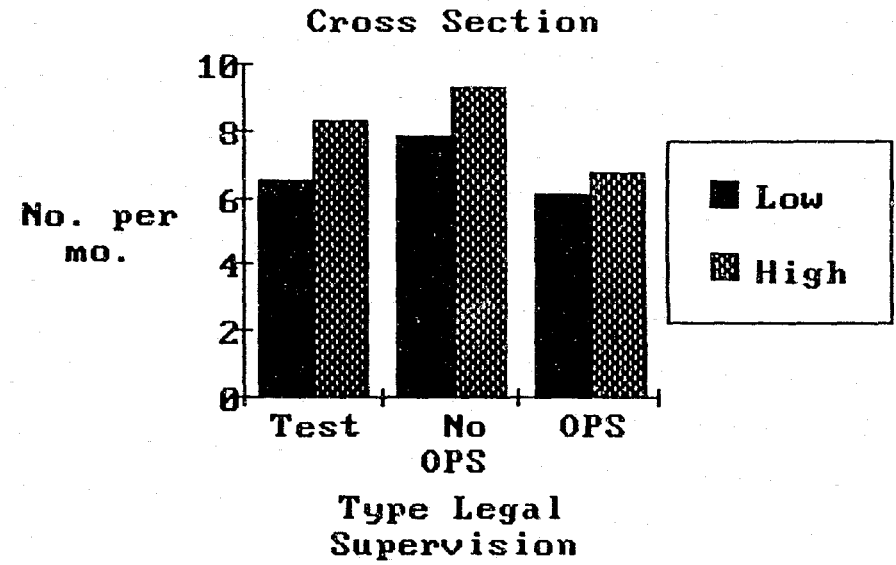
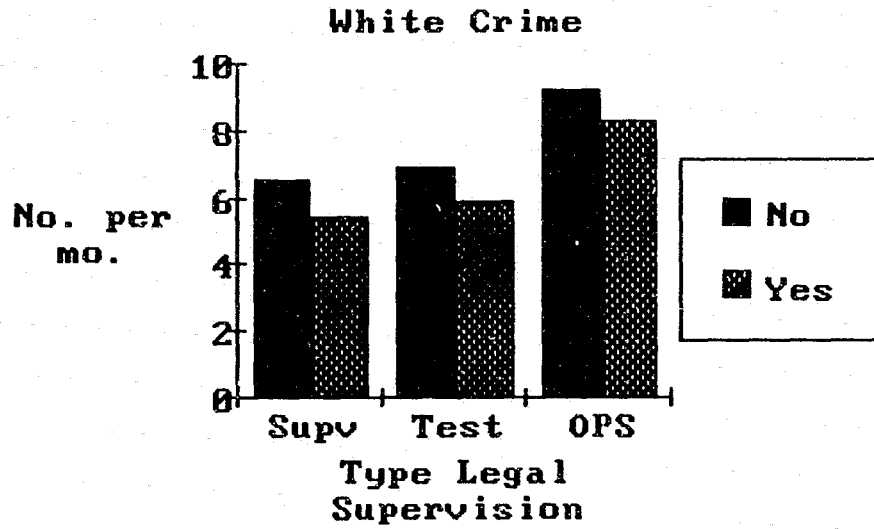


FIGURE 12

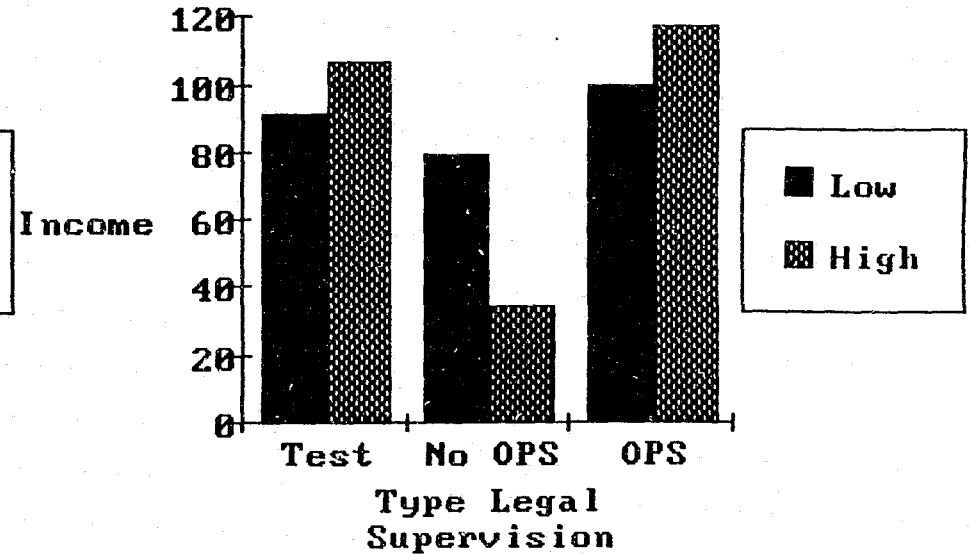
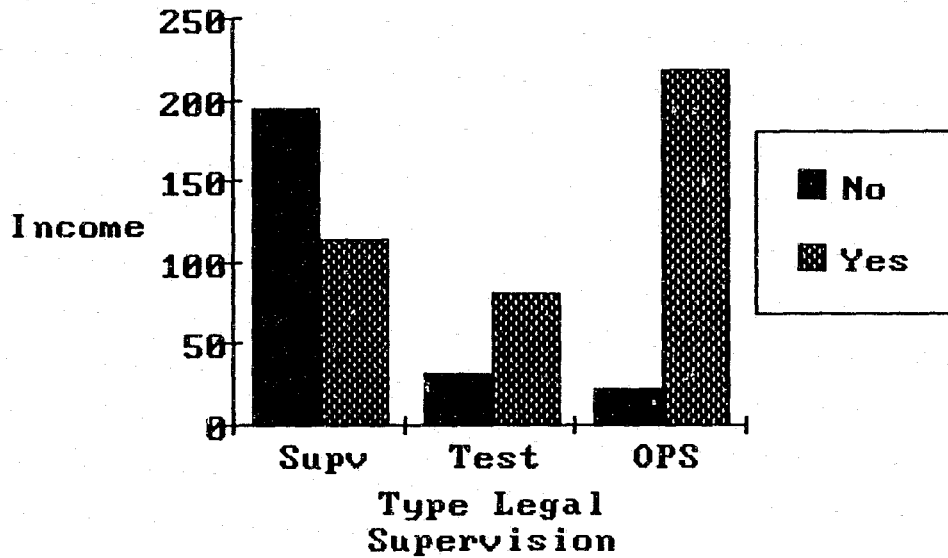
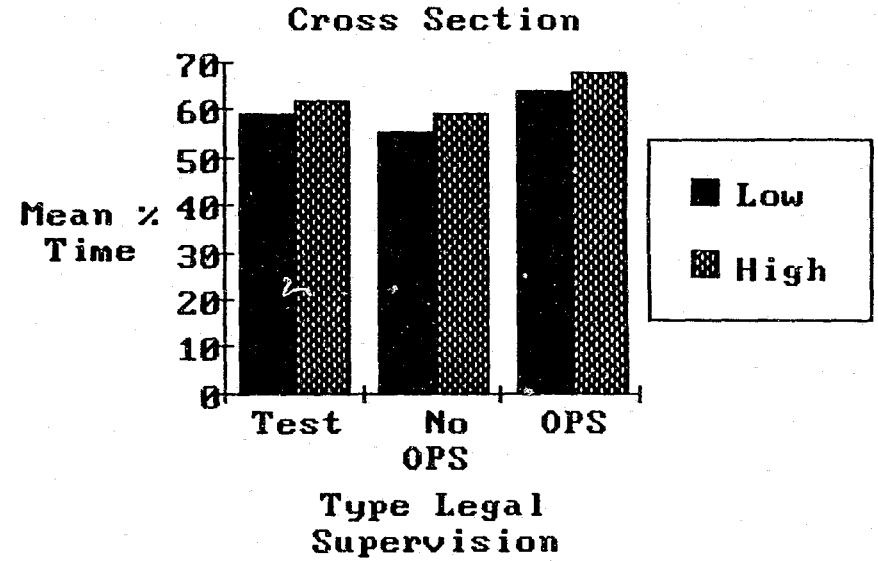
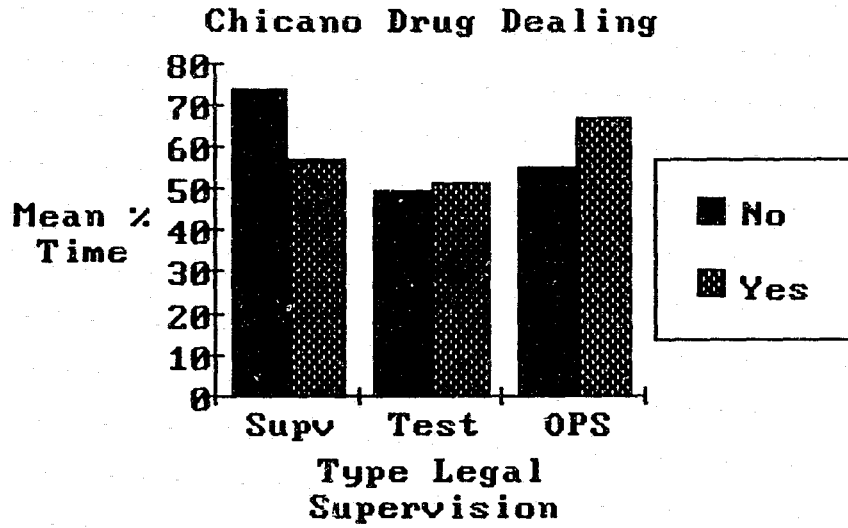


FIGURE 13

