Substance Abuse Trends Based on Drug-of-Choice Reports in a Forensic Population

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Abstract

After a series of research studies were conducted to evaluate various individual psychological constructs in a mid-Michigan prison-diversion work-release program, 212 randomly drawn demographic data sheets from residents were compiled and evaluated for reported drug use trends. The following article examines reported drug-of-choice trends in this population from valid evaluation results. In addition, issues related to current incarceration-related treatment modalities are generally explored, as well as the implications for potential orthomolecular intervention.

Introduction

In spite of growing public concern recently, it should be noted that substance abuse and dependence is a topic that could hardly be considered as merely a contemporary issue. Beer was first made in Egypt 5,000 years ago,[1] and early Hindu ayurvedic[a] writings described the consequences of alcohol abuse at least 2,500 years ago.[2] Twenty-six hundred years ago, Cambyses, King of Persia (c. 600 BCE), had the "dubious distinction of being one of the first identified alcoholics on record".[1] A dramatic, nearly poignant, description of substance dependence, specifically alcoholism, was written nearly 3,000 years ago in the words of Proverbs 23: 29-35 (KJV), and opium is equally entrenched in human history, possibly up to 5,000 years ago, as well as marijuana and hashish use recorded as long ago as 2737 BCE.[1]

Despite the long, often tumultuous history, alcohol and drug abuse and dependence continues to be a serious contemporary social issue that currently impacts overcrowding of prisons, jails, diversion programs, and community counseling programs. Despite the White House Office of National Drug Control Policy (ONDCP) statistics[b] indicating that national drug use in the United States is waning,[3] the ONDCP's Michigan report,[4] and the more regional Michigan Department of Correction's (MDOC) data that indicates a similar trend for Michigan,[5] the problem in mid-Michigan appears actually to be growing rather than decreasing. Numerous social interventions implemented to curb alcoholism and drug addiction in Michigan in the last three decades appear to have fallen short of their objectives, which leads to the question of why less expensive orthomolecular treatments are not being explored.

Many studies of drug trends primarily deal with the consumer, or end-user position of use or addiction, rather than examining the drug-of-choice position of those individuals who have lingered in the drug counterculture for many years. The respondents in this report are often the very individuals who are the middlemen distributing the product to others equally afflicted. Even with the youngest participants in this report, most of their criminal histories are extensive, as are their drug and alcohol abuse histories.

Participants

The population consisted of residents of a mid-Michigan prison and jail diversion program (N=212). Very few were allopathically compensated for their overt psychological disturbances, and none were orthomolecularly compensated, as orthomolecular treatment in this population is strictly forbidden. All subjects were male, and ages ranged from 18 to 65 years

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old (M=31.1, SD=10.44). The participant's median age was 30, similar to the mean, but the mode was 22.

Completed education levels reported by the participants ranged from eighth grade (n=5) to college graduates (n=5), with a mean grade completed of 11.7 (SD=1.62). The median and the mode grade completed was 12, as slightly over one-third of the participants reported completing high school or its equivalent (n=73, 34.439%). A comparison of age and education level delineated by ethnicity is defined in **Table 1** (below).

Demographics

The ethnic composition of the group reflects a diverse population. The breakdown of the population by number and percent of the total population is illustrated in **Table 2** (below). Please note that the term "Black" is used throughout out of respect for the participants who prefer the term, rather than African American. Zero participants indicated being in two other categories listed on the demographic sheet, which were Native American and Oriental. Due to the low number of "Other" and "Mixed" participants, only the top three categories are evaluated in certain tables.

Total arrests and convictions were also evaluated for potential impact or correlation to drug trends. A complete breakdown of means and standard deviation is presented in **Table 3** (p.163), including breakdown by race. The number of total arrests, not just drug related, reported by this population was 1,894 (M=8.9, SD=5.76). The median reported number of arrests was seven, and the mode was five. While the 0.05 confidence level of this data was 0.78, Microsoft® Excel TRIMMEAN© function was used to eliminate high and low reported extremes and establishes a more probable mean of 8.29 arrests per man. Convictions for misdemeanors totaled 1,093 (M=5.2, SD=4.32). The median reported number of convictions for misdemeanors was four, and the mode was three. The 0.05 confidence level of the misdemeanor conviction data

Table 1. Age and education means and standard deviation by race.

Category	Total (N=212)	White (n=117)	Black (n=68)	Hispanic (n=17)
Age	31.1(SD=10.44)	31.1 (SD=11.53)	31.4 (SD=9.35)	29.6 (SD=6.75)
Education	11.7 (SD=1.62)	11.9 (SD=1.69)	11.5 (SD=1.60	11.4 (SD=1.27)

Table 2. Population by race and percent.

Race	Number	Percent
White	117	55.19
Black	68	32.08
Hispanic	17	8.02
Mixed	7	3.30
Other	3	1.42

set was 0.58, but TRIMMEAN returned a more probable mean of 4.63 misdemeanor convictions each.

Reported felony convictions for the population totaled 524 (M=2.5, SD=1.93). The median for felony convictions was two, and the mode was one. The 0.05 confidence level of the felony conviction data set was 0.26, and TRIMMEAN provided a more probable mean of 2.09 felony convictions each. The combination of convictions for felonies and misdemeanors in this population equaled 1,617 or 7.62 combined convictions each.

Method

The demographic sheet of the various research projects requested various information about the participant. Obviously from the above reported data, age, race, highest grade completed, arrests, and convictions were requested, but the participants were also asked to indicate if they had been in prior counseling, or if they were on any current psychotropic medications. Further, the demographic sheet listed nine categories of commonly used drugs (i.e., alcohol, marijuana, cocaine, hallucinogens, "downers", crack, "speed", mushrooms, and heroin[d]). Each participant was asked to indicate (up to) the top four choices with regard to the individual's use pattern, although not all four ranks were required if the participant did not use four substances. The participant's were asked to only indicate a rank number of one (1) through four (4) to indicate preference order, with the number one being the participant's preferred drug-of-choice.

All listed substances beyond the individual's indicated choices, or the four ordered numbers requested, were given an equal value of five to statistically evaluate the data. Some participants had no second, third, or forth choice. In some cases, no choice at all was indicated, as not all participants were substance users, but these instances were relatively very few (n=4). The participants were also asked to provide the number of days per week they used their drug-of-choice.

Results

Predictably, alcohol is the overwhelming statistical drug-of-choice of this population, followed by marijuana and cocaine respectively. The number of poly-substance users in this report is highly indicative of the global nature of addiction. As reported above, very few of the participants in this study were non-drinkers or non-users (n=4), and the breakdown of users by total multiple number of drug-of-choice selections is illustrated in **Table 4** (p.164). The inference of this data is clear; that where a substance abuse diagnosis is indicated with a forensic client, it is statistically likely that there is a poly-substance abuse problem. An inference might also be drawn that

Table 3. Arrest and conviction means with standard deviation.

Category	Total (N=212)	White (n=117)	Black (n=68)	Hispanic (n=17)
Arrests	8.9 (SD=5.76)	9.1 (SD=6.14)	9.1 (SD=5.34)	7.2 (SD=4.94)
Mi Conv	5.2 (SD=4.32)	5.7 (SD=4.83)	4.3 (SD=3.49)	3.9 (SD=3.65)
Fe Conv	2.5 (SD=1.93)	2.5 (SD=2.05)	2.5 (SD=1.78)	2.2 (SD=1.30)

Note. Mi=misdemeanors; Fe=felony; Conv=Convictions.

alcohol serves to decrease the severity of other severe psychological symptoms (Mitchell, 2005b) not addressed by allopathic or orthomolecular means.

Of the selections made for drug-of-choice, alcohol garnered the most number one votes (n=105, 49.5%), and marijuana finished second in first place voting (n=63, 29.7%). Crack was the only other drug to get double digits in first place voting (n=19, 9.0%). A complete breakdown of selections by category is in **Table 5**, (below). A reminder here that a vote of "5" indicates that this substance was not chosen by the participant, or fell beyond the four choices allowed. Thus, while crack is the third most highly selected number one drug-of-choice, it is also the fifth most rejected drug (n=164), indicating statistically that crack is in some ways even less popular than hallucinogens. Heroin was the most rejected drug in this population.

Thirty-four (16.03%) of the total 212 participants cast only one vote for a drug-of-choice, and are thus defined as mono-substance users, and this number infers that only a fraction of substance users with any forensic chronicity are mono-substance users. Of those mono-substance

Table 4. Number and percent with multiple drugs-of-choice.

Number chosen	Number whom selected	Percent of total
0	4	01.88
1	34	16.03
2	32	15.09
3	30	14.15
4	112	52.83

Table 5. Number of votes cast per ranked order of preference.

	Rank and Votes by Number				
Substance	**1**	**2**	**3**	**4**	**5**
Alcohol	105	44	17	21	25
Marijuana	63	57	24	10	58
Cocaine	8	39	39	17	109
Hallucinogens	5	8	21	19	159
Downers	1	6	7	8	190
Crack	19	9	11	9	164
Speed	4	3	9	4	192
Mushrooms	1	7	12	23	169
Heroin	2	0	1	2	207

Note. A selection of "5" indicated that the drug was either not chosen by the participant, or fell beyond the allowed number of selections.

users (n=34), alcohol was the favorite (n=23, 10.85%), with marijuana again second (n=10, 4.72%), and cocaine garnering only a single vote (n =1, 0.47%).

To further evaluate the drug-of-choice patterns in the population, the weighted values of reported choices were also analyzed (see **Table 6,** below) for a statistical mean based on all numerical values assigned by the respondents. Note that the closer the mean is to "1" (one) the more preferred the substance is for the population, and conversely, the closer the mean is to "5" (five), the more rejected the substance was by the population. Use days per week (UPW) and ethnic breakdowns are also included in this Table. The UPW is presented as a straight mean, as it had no weighted value. With weighting involved, it illuminates trends where second, third, and fourth choices impact the overall picture. Based on all non-primary choices, cocaine actually ranks higher than crack in overall drug-of-choice. The UPW mean as reported by this population (again, see Table 6) was very high (M=5.28, SD=2.13). In reported number of days per week that the individuals engaged in using their drug-of-choice, the median was seven, as was the mode. The 0.05 confidence level of the UPW data set was 0.29, however TRIMMEAN provided a more probable mean of 5.57 days per week that a statistically similar population would use their drug-of-choice.

Correlations to other factors (e.g., age, education, race, etc.) were also analyzed to evaluate any possible connection. Beginning with comparison of drug category to age and education, the correlative data is presented in **Table 7** (p.166). While most correlation data in this comparison was less than statistically significant, the strongest positive correlation seemed to be the use of crack with the increased age of the user. The strongest negative correlation was the use of marijuana with increased age, inferring that marijuana use is more popular in the younger portion of the population, as are hallucinogens.

Further correlative data was analyzed to evaluate potential connections between UPW, arrests, and conviction types to age and education. That data

Table 6. Weighted value means and days of use per week by race.

Substance	Total	White	Black	Hispanic
Alcohol	2.14	2.10	2.28	2.00
Marijuana	2.73	2.91	2.43	2.76
Cocaine	3.85	3.93	3.79	3.82
Hallucinogenics	4.50	4.24	4.99	4.59
Downers	4.79	4.68	4.94	4.88
Crack	4.37	4.51	4.09	4.47
Speed	4.78	4.69	4.99	4.82
Mushrooms	4.66	4.54	4.91	4.47
Heroin	4.94	4.91	4.97	5.00
Use Days Per Week	5.28	5.44	5.15	4.41

Note. The lower the weighted mean, the more the substance was preferred. The closer to the number 5 the more rejected the substance. The Use Days Per Week is not a weighted mean, but rather is presented as a straight mean.

Table 7. Correlation of age and education to drug-of-choice.

	Correlation	
Substance	**Age**	**Education**
Alcohol	0.09	-0.05
Marijuana	-0.41	-0.28
Cocaine	0.17	0.08
Hallucinogens	-0.30	-0.06
Downers	0.07	0.07
Crack	0.31	0.17
Speed	0.12	0.02
Mushrooms	-0.08	0.07
Heroin	0.03	0.02

Table 8. Miscellaneous correlations to age and education.

	Correlation	
Category	**Age**	**Education**
Use Days Per Week	-0.11	-0.23
Arrests	0.12	-0.01
Misdemeanor Convictions	0.06	-0.01
Felony Convictions	0.20	0.10

is presented in **Table 8** (p.166). While no statistically significant correlation of these variables exists, it is important to emphasis the negative correlation between education and UPW. This indicates that the more educated the individual, the less number of days per week the drug-of-choice is used, an important factor to examine when considering potential policy changes for future treatment. The slight correlation between age and number of felony convictions is illusory, as the individuals have merely lived longer and had more opportunity to engage in felonious activity.

Discussion

The history of humankind is rife with alcohol and substance abuse problems, yet clinically the science of abuse and dependence treatment still seems quite young and far from adequate. It is genuinely demonstrative when 98.11% of any sub-population of a community engages in a mind-altering activity that there are legitimate issues that need to be addressed at the macro as well as the micro level. Recidivism to this extent now becomes more of a clinical issue,[6] rather than a problem to be corrected by punitive measures. Psychiatric dysfunction and poten-

tial biological influences of recidivism at this level must be appropriately evaluated and addressed by rational, progressive administrators and clinicians.

Another disturbing fact revealed by this collected data is the extremely high number of participants that have been in prior therapy before this current incarceration (n=173, 81.6%), apparently to little avail. Cliché explanations for failure made by out-of-touch program directors that excuse their ineffective treatments with the old excuse that, "this is an addicted, criminal population," should no longer be tolerated. Nor should any professional clinician's justifications be accepted to continue with interventions that do not effect actual change. Clearly, a new insight is called for in terms of improved service delivery, including the potential effect of orthomolecular interventions, as well as setting a goal toward resolving addiction-based recidivism permanently. Despite numerous successes reported with a combination of orthomolecular treatment and an appropriate 12-step program (Abram Hoffer, personal communication, November 12, 2004), this intervention is unlikely to see implementation in the near future due to the fact that incarceration of addicts has become big business. Millions of tax dollars are exchanged throughout the system weekly, nearly assuring the continuation of ineffective treatments, and thus the continued failure of the afflicted.

The number of individuals who scored very high in terms of genuine psychiatric symptoms from the research portion of the study was also unsettling, and yet only a minor portion (n=6, 2.83%) were receiving any allopathic medicinal compensation for those symptoms. As stated above, orthomolecular treatment was not merely discouraged, it was forbidden in this facility, as administrators insisted that niacin ingestion by the residents resulted in false-negative results in urinalysis. Symptoms of dissociation,[7] perceptual distortion,[8] personality disorder, depression and anxiety, psychoticism, including personality type,[9] among other severe psychological problems, are almost uniformly elevated or skewed in this population. Even with corrections made to symptom-specific tests[10] the more disturbing symptoms are consistently more highly endorsed.

Finally, the implication for a more aggressive orthomolecular approach to addiction and recidivism is clear. The results of the above-evaluated data indicate a genuine need for further study that should include the contemporary value of orthomolecular intervention. The incorporation of a more appropriate evaluative system to measure of the potential impact of all forensic interventions should be made more publicly accountable, and a reconsideration of current ineffective punitive treatment modalities for addicts should be reconsidered.

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Notes

a) Ayurvedic is an ancient, traditional Hindu system of medicine that uses herbs, rubbing oils, and purgatives in treating disease.

b) ONDCP statistics are based on U.S. Department of Health and Human Services, U.S. Department of Defense, and U.S. Department of Justice statistics.

c) Microsoft® TRIMMEAN calculates the interior mean of the data set by excluding outlying data from the top and bottom tails of the data set. The trimmed percentage of all TRIMMEAN functions calculated in this research is 0.2, or 20 percent, ten percent from the top and ten percent from the bottom.

d) While cocaine and crack are quite simply both cocaine, mushrooms and marijuana are in fact hallucinogens, and alcohol is a central nervous system depressant or "downer," due to the variety of their strength, individual impact, and physical forms these were listed separately to further delineate use trends.