

# COMPARISON OF YOUNG NAVY ALCOHOL ABUSERS AND DRUG ABUSERS ON DEMOGRAPHY, PERSONALITY, PERFORMANCE, AND TREATMENT OUTCOME

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Comparison of Young Navy Alcohol Abusers and Drug Abusers  
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## SUMMARY

PROBLEM: Similarities and differences between young drug and young alcohol abusers have important implications for the possibilities of implementing common treatment programs and for evaluating and predicting outcomes of treatment.

OBJECTIVE: The characteristics of young drug abusers and young alcohol abusers were compared, and characteristics of both groups that predicted post-treatment effectiveness were identified.

APPROACH: Young men (age 25 or younger) admitted to drug (N = 911) or alcohol (N = 723) rehabilitation facilities during 1975-1977 were compared on demography, attitudes toward service, military disciplinary histories, personality characteristics (Comrey Personality Scales), and post-treatment effectiveness. Effectiveness was defined as active duty status or receipt of a favorable discharge from service with no recommendation against reenlistment 6 months or more following treatment. Because a large percentage of the drug rehabilitees were released from service within 30 days after completing treatment, noneffective groups (both drug and alcohol) were divided into subgroups of men who served more than 30 days and men who served less than 30 days.

RESULTS: At the time of enlistment the drug and alcohol abuse groups had similar potential for successful naval service as reflected by SCREEN scores (an actuarial table based upon age at enlistment, education, AGQT score, and marital status). Drug abusers entered rehabilitation earlier in their careers on the average than alcohol abusers and had less favorable disciplinary histories. Drug abusers had much lower Social Conformity scores than alcohol abusers both pre-treatment and post-treatment. Drug abusers also scored significantly lower on the Trust Scale, particularly post-treatment. Drug abusers scored higher than alcohol abusers on the Emotional Stability, Extraversion, and Masculinity Scales both pre-treatment and post-treatment. There was substantial psychological change during treatment in both groups as measured by the Comrey Scales; the largest positive changes for both groups were on the Emotional and Extraversion Scales.

When effective drug abusers were compared with the noneffective group and the group released from service within 30 days after treatment, it was clear that men released immediately after treatment were poor candidates for retention in terms of attitudes toward service, disciplinary records, and psychological characteristics. Men who remained on duty longer but who were ultimately ineffective had less satisfactory disciplinary records than effective men. For the alcohol abusers the effective group evidenced better service and disciplinary records, were more often career-oriented, and expressed more socially conforming attitudes than either the noneffective group or the group released from service within 30 days.

CONCLUSIONS: Post-treatment effectiveness for both drug and alcohol abusers was characterized by

higher pay grades, less severe disciplinary histories, and psychological characteristics of social conformity and emotional stability. Drug and alcohol rehabilitation programs were about equally effective overall in producing psychological change, although notably alcohol abusers changed more on Trust; however, drug abusers remained relatively low on Social Conformity scores after treatment. It would appear that young alcohol and drug abuser groups could be treated together in a program that affords an opportunity to deal effectively with both the social conformity problems of the drug abusers and the emotional instability problems of the alcohol abusers.

RECOMMENDATIONS:

1. More detailed substance abuse histories should be obtained from both alcohol and drug abusers admitted to treatment so that the nature and severity of substance involvement can be determined. Present information available in this area is inadequate.
2. An experimental program should be instituted at one or more Alcohol Centers and/or Services to investigate the effectiveness of special treatment procedures for young substance abusers (both drug and alcohol) which emphasize social conformity and emotional instability problems.
3. Individuals with low SCREEN scores, unfavorable disciplinary records, and low Comrey Social Conformity scores should not be admitted to alcohol or drug residential treatment programs.

## INTRODUCTION

### Background

The U.S. Navy has been operating separate rehabilitation programs for drug abusers and alcohol abusers on an increasingly large scale since the early 1970s. The programs have developed independently in large measure because of attitudes on the part of Navy personnel and the broader community toward drug abusers, the Navy's experience with individuals abusing various substances, and characteristics of the participants themselves. Prior to 1970, many more Navy personnel were treated for alcoholism than for illegal drug abuse. The population hospitalized for alcohol abuse during the years 1965-1969 tended to be experienced (mean age = 33 years) career men (1). For drug abusers hospitalized during the same period, approximately 80% were less than 21 years old (2). These differences in age and military experience also were characteristic of the earliest populations of alcoholics and drug abusers admitted to specialized rehabilitation programs (3, 4). Further, the population admitted to the Drug Rehabilitation Center during its first year of operation consisted of young men characterized by immaturity and low motivation for military duty; these men tended to be viewed with suspicion by the local community (4). While attitudes toward abusers of illegal drugs have been modified somewhat by experience and the widespread use of certain illegal drugs in the general population, known Navy drug abusers tend to be concentrated among younger members of the service.

The percentage of younger men among alcohol abusers has steadily increased during the past several years. Current studies indicate that 45% of all admissions to alcohol rehabilitation facilities are less than 26 years old (5). Many of these younger men, like the drug abusing group, are immature and poorly motivated for continued service. Their response to treatment has been less favorable than that of the older alcohol abuser (6). In the present study the question of similarities and differences between the young drug and young alcohol abuser in the Navy is examined and the issue of the appropriateness of treating the two groups together in the same program is addressed.

Similarities between alcohol and drug abusers have been established in the civilian population (7,8). Even where the difference in mean age was considerable (21 years for drug abusers and 39 years for alcoholics) in a military population, Black and Heald (9) noted that the two groups could not be differentiated to a significant degree with regard to their psychological functioning on the Minnesota Multiphasic Personality Inventory. While some observers suggest that young abusers of either alcohol or drugs will have more in common than either would have

with middle-aged clients (10), combined treatment of young and old has been considered successful (11).

### Objective

This report compares two groups of young Navy enlisted men treated for substance abuse: (a) Men admitted to the Naval Drug Rehabilitation Center, Miramar, and (b) men admitted to four Alcohol Rehabilitation Centers and one Alcohol Rehabilitation Service located at major naval bases in the United States. Differences between the two groups are examined, and within each group the characteristics of men who performed effectively following treatment are identified.

### METHOD

#### Sample

Young men (25 years old or younger) admitted to the drug ( $n = 911$ ) or alcohol ( $n = 723$ ) facilities indicated above during the years 1975-1977 were included in the study. Participants were restricted to those who completed the intake and post-treatment test batteries in the respective programs. The Comrey Personality Scales were included in both test programs. These scales provide measures of following personality dimensions: Trust vs. Defensiveness; Orderliness vs. Lack of Compulsion; Social Conformity vs. Rebelliousness; Activity vs. Lack of Energy; Emotional Stability vs. Neuroticism; Extraversion vs. Introversiön; Masculinity vs. Femininity, and Empathy vs. Egocentrism.

#### Procedure

With the exception of basic demographic and military status information such as age, years of service, and pay grade, the biographical questionnaires administered in the two programs were not alike. Therefore, roughly comparable items were selected from either data base that reflected demographic and military status variables, attitudes toward the Navy, information concerning substance abuse, and problems associated with such abuse.

A measure of potential for satisfactory naval service, the SCREEN score, was derived from information available at the time of enlistment: age, education, Armed Forces Qualifying Test (AFQT), and marital status (12). The score represents the actuarial odds or probability that the individual will complete at least one year of service.

Information pertaining to performance, that is, demotions, unauthorized absences, and desertions, was obtained from Bureau of Naval Personnel files. Post-treatment outcome (effective vs. noneffective) also was determined from these files. Men were considered effective who were on active duty or had received favorable discharges from the service and had no recommendation against reenlistment six months or more following treatment. Noneffective men were those who

received unfavorable discharges or recommendations against reenlistment following treatment.

Mean differences between the drug abuser and alcohol abuser groups on basic demography, performance indices, and the Comrey Personality Scales were determined by t-tests for independent means; t-tests for correlated means were used for pre-treatment-post-treatment comparisons on the Comrey Scales for the two groups separately.

The disposition of drug abusers upon completion of treatment differed markedly from that of alcohol abusers. Drug abusers were carefully screened at the completion of treatment and only those with the most favorable drug use and disciplinary histories as well as strong positive motivation for continuing military service were restored to duty. During the period of this study, approximately 65% of the drug abuser population were released as noneffective within 30 days of completion of treatment.

For purposes of the present analysis, each population was divided into effective, noneffective, and less than 30 days post-treatment service subgroups. The latter group consisted of individuals who served less than 30 days in the naval service after completion of rehabilitation. These subgroups were then compared on similar items selected from the two data bases using one-way analysis of variance. The Scheffé t-test was used for all post hoc comparisons where significant Fs were obtained.

#### RESULTS

As shown in Table 1, young alcohol abusers scored significantly lower than young drug abusers on the Armed Forces Qualifying Test (AFQT) yet had completed more years of schooling. Average SCREEN scores, which were partly based upon AFQT scores and education, were the same for the two groups.

In spite of the fact that both samples were restricted on age (25 years old or less), alcohol abusers were a little older and had higher pay grades than drug abusers at the time of admission to rehabilitation. Alcohol abusers also had served longer on duty and were more often married than drug abusers. The groups were similar with respect to racial composition, however.

The two groups were compared on incidence of demotions, unauthorized absences, and desertions. Drug abusers had more demotions and unauthorized absences per year than alcohol abusers.

Differences between the alcohol and drug groups on both pre-treatment and post-treatment Comrey Scales are shown in Table 2. Alcohol abusers scored higher on two scales, Trust and Social Conformity, and lower on three scales, Emotional Stability, Extraversion, and Masculinity, both before and after treatment. Alcohol abusers scored higher on the Empathy Scale only after treatment.



Changes in Comrey scores from pre-treatment to post-treatment are shown in Table 3. Significant positive changes occurred on five scales for both groups: Trust, Social Conformity, Activity, Emotional Stability, and Extraversion. Negative changes were evident for both groups on the Empathy Scale.

Table 3  
Psychological Changes on Comrey Personality Scales  
for Young Alcohol and Drug Abusers

<u>Personality Scale</u>	<u>Alcohol Abusers</u>		<u>Post-Treatment</u>		<u>t</u>
	<u>Pre-Treatment</u>		<u>Mean</u>	<u>S.D.</u>	
Trust	78.92	12.21	82.85	13.32	- 7.97***
Order	87.37	13.11	88.14	12.04	- 1.84
Social Conformity	83.68	13.63	85.72	12.42	- 4.83***
Activity	89.58	16.13	92.60	15.63	- 5.60***
Emotional Stability	83.24	16.92	93.06	16.04	-14.42***
Extraversion	74.16	19.52	83.06	18.31	-13.00***
Masculinity	85.97	12.46	85.25	11.53	1.77
Empathy	90.32	16.65	88.66	14.17	3.21**

N = 723

<u>Personality Scale</u>	<u>Drug Abusers</u>		<u>Post-Treatment</u>		<u>t</u>
	<u>Pre-Treatment</u>		<u>Mean</u>	<u>S.D.</u>	
Trust	76.42	12.87	77.91	12.87	- 3.56***
Order	86.70	15.20	87.40	14.63	- 1.62
Social Conformity	75.11	15.50	77.34	15.18	- 5.01***
Activity	89.46	16.40	93.53	16.69	- 8.14***
Emotional Stability	86.80	17.78	95.06	16.35	-14.27***
Extraversion	81.21	20.85	87.74	18.64	-11.10***
Masculinity	88.03	13.08	87.45	13.04	1.52
Empathy	90.16	15.65	87.09	15.12	6.33***

N = 911

\*\*p < .01  
\*\*\*p < .001

The proposition was tested that the differences between alcohol and drug abusers in magnitude of change were not significant. The null hypothesis was rejected because alcohol abusers showed greater change than expected, that is, compared to drug abusers, on the scales for Trust ( $t = 3.81$ ,  $p < .001$ ), and Extraversion ( $t = 2.64$ ,  $p < .01$ ) and less change than expected on Empathy ( $t = -1.97$ ,  $p < .05$ ). Changes on other scales were not significantly different.

Differences among the drug abuser subgroups--effective, noneffective, and less than 30 days service--are shown in Table 4.

Differences among groups on age and years of service were not significant. The effective group had completed more years of schooling and had higher SCREEN scores at enlistment than

Table 4

## Variables that Discriminated among Drug Abuser Subgroups

<u>Variable</u>	<u>Group A</u>	<u>Group B</u>	<u>Group C</u>	<u>F-Ratio</u>	<u>Significant Scheffé t Values</u>		
	<u>Effective</u>	<u>Non-Effective</u>	<u>&lt; 30-Day</u>		<u>AB</u>	<u>BC</u>	<u>AC</u>
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>				
Pay grade at admission	2.92	2.65	2.51	9.76			4.41
Years of education completed	11.64	11.32	11.39	5.28	2.95		2.95
SCREEN score	82.36	79.38	80.35	4.42	2.84		2.45
Using Center to get out (Agree-Disagree)	4.71	4.57	4.07	12.25		3.24	4.31
Want to return to duty (Agree-Disagree)	3.03	3.36	4.36	33.67		-5.28	-7.29
Like the Navy (Agree-Disagree)	4.14	4.30	4.97	21.90		-4.50	-5.79
Drugs Used Preceding 6 Months:							
Marijuana	4.65	4.66	4.96	4.00			
Amphetamines	2.07	2.39	2.36	3.13			
Cocaine	1.84	1.86	2.07	3.59			
Tranquilizers	1.63	1.90	2.01	5.72			-3.36
Number of Friends Using:							
Marijuana/Hashish	4.95	5.09	5.24	4.23			-2.77
Hard drugs	3.57	3.72	4.08	8.94		-2.61	-3.84
Comrey Scales Pre-Treatment:							
Order	89.77	87.79	85.51	5.62			3.20
Social Conformity	78.45	77.18	73.55	8.28		2.58	3.62
Emotional Stability	90.48	85.16	86.03	4.75	2.67		2.85
Comrey Scales Post-Treatment:							
Order	89.44	88.53	86.51	3.16			
Social Conformity	80.34	79.77	75.79	8.32		2.89	3.43
Demotions (Number/year)	.14	.32	.34	20.13	-4.47		-6.36
Unauthorized absences (Number/year)	.28	.55	.45	6.79	-3.63		-2.92
Desertions (Number/year)	.02	.10	.02	13.48	-4.65	5.72	
N	166	151	586				

either the noneffective or 30-day group. The effective group also had achieved a significantly higher pay grade at the time of admission than the 30-day group.

Attitudes toward naval service were most favorable for the effective group and least favorable for the 30-day group. The items reflecting motivation for service ("want to return to duty" and "like the Navy") were highly discriminating between the 30-day group and the other two subgroups.

Reported drug use during the preceding six months varied significantly among the three groups; generally, the effective group had been least heavily involved in drug abuse and the 30-day group most heavily involved. The same trend was reflected in the items pertaining to prevalence of drug use among friends.

Pre-treatment scores discriminated among groups on three Comrey scales: Order, Social Conformity, and Emotional Stability. The effective subgroup showed the most favorable pattern and the 30-day group the least favorable. Post-treatment scores discriminated on two scales, Order and Social Conformity; again, the effective group had the most favorable scores, but the differences between effective and noneffective subgroups were small.

Both the noneffective and 30-day groups had more demotions and unauthorized absences than the effective group. The noneffective group had a higher desertion rate than either the effective or 30-day subgroups.

Differences among effective, noneffective, and 30-day alcohol abuser subgroups are shown in Table 5. Effective men were older, more experienced, more likely to consider the service a career, and more advanced in pay grade at the time of admission to rehabilitation than noneffective or 30-day men.

On three indicators of personnel quality--AFQT score, education, and SCREEN score--effective men had the most favorable pattern of results and their SCREEN scores were significantly higher than noneffective or 30-day men.

Effective men had fewer health problems (sick calls) than the other two groups, and generally experienced fewer health and disciplinary problems directly related to alcohol. The groups differed with respect to drinking behavior, that is preferring beer/wine to hard liquor and drinking at the rehabilitation center. The latter item was particularly discriminating among all three subgroups. The prognostic rating by rehabilitation staff differentiated the effective group from both the noneffective and 30-day groups.

Pre-treatment scores on the Comrey Social Conformity Scale discriminated the effective group from the other groups; none of the other scales differentiated among groups. Post-treatment

Table 5

## Variables that Discriminated among Alcohol Abuser Subgroups

<u>Variable</u>	<u>Group A</u>	<u>Group B</u>	<u>Group C</u>	<u>F-Ratio</u>	<u>Significant Scheffé t Values</u>		
	<u>Effective</u>	<u>Non-Effective</u>	<u>&lt; 30-Day</u>		<u>AB</u>	<u>BC</u>	<u>AC</u>
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>				
Age at admission	21.69	21.07	20.70	10.90	3.82		3.73
Service is career (Yes-No)	.65	.75	.91	10.76	-2.81		-4.37
Pay grade at admission	3.29	2.55	2.12	54.01	8.62	2.96	8.09
Years of service at admission	.71	.51	.31	10.34	3.34		3.97
AFQT	58.21	56.40	47.74	7.97		2.89	3.50
Years of education completed	11.62	11.55	11.27	3.33			2.58
SCREEN score	81.74	79.69	75.90	10.24	2.65	2.75	4.26
Number of times at sick call	3.42	4.08	4.70	8.64	-3.10		-3.57
Problems due to alcohol:							
Trouble on the job	.66	.76	.75	4.25	-2.76		
Demoted	.27	.34	.45	4.99			-2.89
Disciplinary difficulty	.60	.71	.67	4.50	-2.93		
M.D. said to stop drinking	.24	.33	.30	3.49	-2.53		
Shakes due to alcohol	.60	.69	.58	3.28			
Hallucinations due to alcohol	.18	.25	.33	4.40			-2.66
Drink beer-wine vs. hard liquor	1.28	1.80	1.54	3.00			
Drank in clinic (No-Yes)	.31	.55	.92	13.06	-3.11	-2.93	-4.88
Prognosis (Excellent-Poor)	1.61	1.88	1.93	8.87	-3.85		-2.81
Comrey Scales Pre-Treatment:							
Social Conformity	85.98	81.95	81.28	8.28	3.76		2.60
Comrey Scales Post-Treatment:							
Trust	85.12	81.67	78.54	10.02	3.36		3.80
Social Conformity	87.73	84.44	83.45	7.20	3.39		2.61
Emotional Stability	95.66	91.26	89.09	8.40	3.48		3.09
Demotions (Number/year)	.11	.32	.28	49.54	-9.78		-4.70
Unauthorized absences (Number/year)	.17	.55	.55	34.10	-7.93		-4.70
Desertions (Number/year)	.01	.10	.02	22.17	-6.61	3.47	
N	325	307	67				

scores discriminated on three scales, Trust, Social Conformity, and Emotional Stability. The effective group had more favorable scores on all three scales than either of the other groups.

The effective group had fewer demotions and unauthorized absences than the other two groups and fewer desertions than the noneffective group.

#### DISCUSSION

On the basis of information routinely available at enlistment in the Navy, the young alcohol and drug abusers had similar potential for completing their obligated service. Average SCREEN scores, derived from age at enlistment, years of education, AFQT scores, and marital status, did not differ for the two groups. Despite equal service potential by this measure, drug abusers had more disciplinary problems, that is, higher rates of unauthorized absences and demotions, than alcohol abusers during their military careers. Furthermore, a much greater percentage of drug abusers were separated from service as noneffective. To a large extent this was the result of intensive screening at the end of rehabilitation. The validity of such screening was indicated by the fact that the group released from service within 30 days after rehabilitation had poor motivation for continued service and unfavorable disciplinary records.

Large differences between alcohol and drug abusers were obtained on the Comrey Personality Scales and the most discriminating scale was Social Conformity. Alcohol abusers scored much higher on this scale than drug abusers for all comparisons. In addition, the effective alcohol abuser subgroup had higher Social Conformity scores than the noneffective and 30-day groups, and the effective drug abuser subgroup had higher scores than the 30-day group. These results suggest that the Comrey Social Conformity Scale might be useful as a screening instrument both for drug abuse and for noneffective performance. Testing this hypothesis would involve administering Comrey Scales to newly inducted recruits and following their progress in the service. Performance criteria would include subsequent identification as a drug abuser and/or alcohol abuser, frequency of disciplinary difficulties, and ultimately type of discharge received from service and recommendation for reenlistment. This Scale has been shown to predict drug use in a college population (13, 14) and has been shown to predict effective performance among Navy enlisted personnel (15).

The drug abusers in this study entered treatment earlier in their service careers than did alcohol abusers. The most likely reasons for this are (a) the greater nonconformity of the drug use group in general and (b) greater concern about drug use than alcohol use by military authorities. Drug use is illegal while alcohol use is not; therefore, drug behavior comes to the attention of military authorities more readily.

The Navy has conducted a drug exemption program since 1971. Exemption Officers can refer drug abusers for treatment and exempt them from punishment. Any individual can claim drug involvement and present himself for treatment; thus, the drug exemption program provides an avenue for premature discharge from service. Nonconforming individuals, disenchanted with service life, may come forward and identify themselves as drug abusers in the hope of obtaining early release. Many of the personnel released within 30 days after drug rehabilitation may have fit in this category--poorly motivated for treatment and poorly motivated for continued military service.

The treatment programs for young alcohol and drug abusers produced remarkably similar psychological changes on the Comrey Scales. The magnitude of change for both groups on the Social Conformity Scale was relatively small. On the other hand, there was a marked reduction in neurotic symptomatology (Emotional Stability scores) in both programs.

The question of whether young alcohol and drug abusers could be treated effectively in the same program can only be addressed indirectly from the perspective of the present findings. In spite of the fact that the psychological changes that occurred in the two populations were very similar, the processes of treatment and personality change in the two settings might differ in important ways. It would appear that the drug abusers to be successful in naval service must give particular attention to their nonconformity, including attitudes toward law and authority, social responsibilities, and approval of successful peers and superiors. Young alcohol abusers, on the other hand, appeared to have greater need to deal with neurotic symptomatology; in this area, present programs appear to be working well. Thus, the question of appropriate treatment might very well depend upon the particular nature of the individual's problems and needs rather than the type of substance abused. It seems plausible that large proportions of both the young alcohol and drug abuser populations might be treated in a common program that affords opportunities for dealing with either or both conformity and emotional instability problems if the participants are positively motivated, and the staff are sufficiently skilled and experienced. A definitive answer to the question can only be obtained through research designed to specifically change those characteristics and ultimately the effects of changes obtained on outcome. Since current programs are having only modest success in changing nonconforming attitudes, the first priority would be an investigation of techniques and experience required to bring about desired changes in this dimension.

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plinary histories, and expressed less trusting and socially conforming attitudes than alcohol abusers. Treatment programs produced similar amounts of psychological change with marked reductions in neurotic symptomatology but minimal change was noted on social conformity dimension. Much larger percentages of alcohol abusers than drug abusers were retained in service following completion of treatment due to administrative policies affecting abusers of illegal drugs. Criteria for post-treatment effectiveness were similar for the two groups. The implications for treating young drug and alcohol abusers together is discussed.

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