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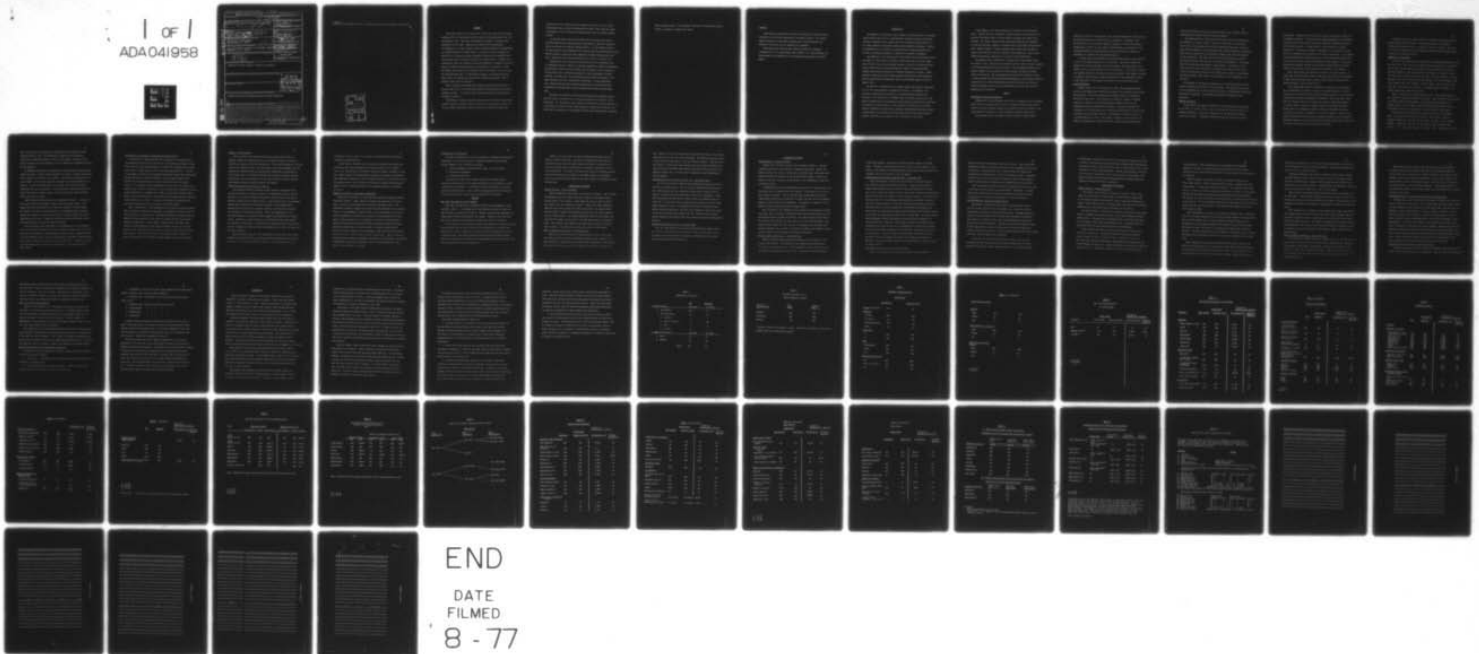
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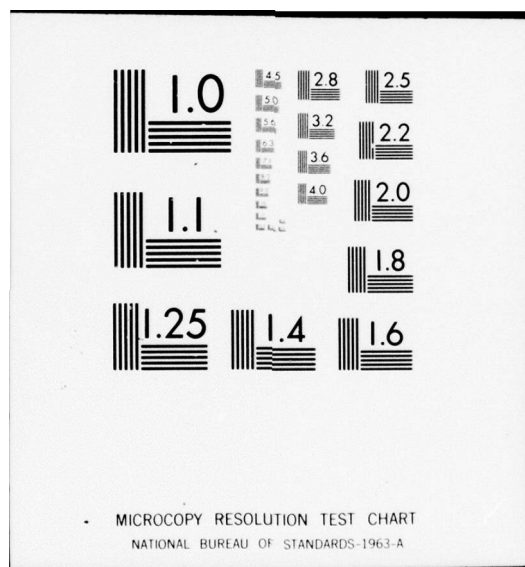
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This is the final comprehensive report of a follow-up study of 202 US Army enlisted men who served in Vietnam between June 1971 and November 1972 and returned to Philadelphia metropolitan area (Pennsylvania and New Jersey). The sample consisted of men who never used narcotics in Vietnam (non-users), those who used but were not addicted, and those who were addicted while in Vietnam. Pre-service, during-service, and post-service variables are considered. In addition to drug and alcohol use, psychological and social adjustment was assessed. The data were collected from military records and from in-depth interviews (including urine

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tests and psychological tests) conducted 28 months after discharge from service.

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SUMMARY

This paper reports on the results of a follow-up study of 202 Vietnam veterans from the Philadelphia area who served in Vietnam between June, 1971 and November, 1972. They were interviewed an average of 28 months after discharge from the army. Subjects were drawn from two populations: (1) admissions to a drug treatment center in Vietnam (N=125); (2) admissions to a USARV hospital in Vietnam (N=77). In order to assess the impact of narcotic use in Vietnam on later adjustment, subjects were classified into three groups based on reported narcotic use during service: Frequent Users (essentially those who reported a period of addiction in Vietnam); Occasional Users (not addicted during service); and Non-Users of narcotics. In the DTC sample, most subjects were Frequent (66%) or Occasional Users (26%) and few were Non-Users (9%). In the Hospital sample, most subjects were Non-Users (49%), but substantial numbers were classed as Occasional (30%) or Frequent (21%) users of narcotics.

Use of narcotics in Vietnam was associated with greater pre-service and in-service use of all other drugs studied, and with greater pre-service criminal activity. It was more likely among veterans with less education and among non-whites.

Evaluations of current adjustment included such variables as employment, criminal activity, emotional status, alcohol use, and drug use. During the two year period following discharge, narcotic use declined sharply from

in-service levels, though not quite reaching pre-service levels; alcohol and marijuana use increased from pre-service levels; other drug use tended to increase as well, particularly among heavier users of narcotics during service.

In the DTC sample, 29% used narcotics after discharge (over 90% of the DTC group had used during service); 18% reported a period of addiction (about two-thirds were addicted during service). In the Hospital sample, 9% used narcotics after discharge (51% of that sample had used during service); 8% had a period of addiction (the comparable statistic during service was 21%). Obviously, these are substantial drops in level of narcotic use.

Although the use of narcotics during service did not inevitably lead to continuing narcotic problems, it did have significant negative consequences. Of particular interest was the finding that the degree of use of narcotics during service was a significant predictor of every adjustment criterion variable, even when age, race, education and pre-service adjustment in the same criterion area were statistically controlled. In every adjustment area, veterans who had used narcotics during service, particularly those classified as Frequent Users, were functioning more poorly than Non-Users were.

The number of significant differences between DTC and Hospital samples when the level of narcotic use in service was controlled was within chance expectancy. Two significant items might be interpreted as factors contributing to detection as narcotics users (less education, heavier use of heroin); two items may be interpreted as consequences of detection (dishonorable discharges,

lower discharge ranks). No meaningful indication of post-service effects of DTC vs. Hospital treatment were found.

FOREWARD

This study was prompted by the need for clinicians to know more about the impact of the Vietnam experience on returning veterans. The complex medical psychiatric, and social problems seen in this population are difficult to sort out and yet important for treatment.

This study could not have been conducted without the energetic collaboration of Col. Norman Ream, then at WRAIR. Col. Harry Holloway and other members of the WRAIR staff also supplied encouragement and helpful advice.

INTRODUCTION

The purpose of this project was to conduct a follow-up study of a prospectively defined cohort of U.S. Army personnel detected as heroin users while serving in Vietnam, and to compare them with a similarly defined cohort of U.S. Army, Republic of Vietnam non-drug related hospital admissions. Particular emphasis was to be placed on evaluating current drug and alcohol use, as well as providing assessment of personal and community adjustment.

The impetus for this study was the deep concern over the extensive heroin use among U.S. Army troops in Vietnam, and the implications such use might have in terms of social and personal sequelae on return to the United States. During 1970 patterns of drug use among U.S. troops in Vietnam underwent changes characterized primarily by increased consumption of heroin. Highly purified, inexpensive heroin became plentiful during 1970, and subsequently, heroin-related hospital admissions, deaths, and offenses began to escalate (Baker, 1971).

In June 1971, a mandatory urine testing program for drugs was instituted for all U.S. Army personnel returning from Vietnam. In September, 1971, extensive unannounced unit testing of all USARV military personnel was initiated. The initiation of the DEROS (date of estimated return from overseas) and additional urine screening programs greatly enhanced the procurement of reasonably reliable data as to the prevalence of heroin use in Vietnam. Soldiers identified as heroin users underwent detoxification and were obliged to participate in a military or civilian drug treatment and rehabilitation program, depending on the amount of time remaining on active duty.

Large numbers of men have returned from Vietnam in the intervening years. Robins (1974) has completed a follow-up study of army enlisted men who were interviewed eight to twelve months following their return from Vietnam. The latter interviews were conducted between May and September of 1972 and included a sample of veterans known to have been "drug-positive" and a "general sample." Results indicated that nearly half the general sample tried narcotics with 20% reporting opiate addiction. After return, useage and addiction essentially decreased to pre-Vietnam levels.

The present study, conducted on a smaller scale, had similar aims as the Robins' study. Follow-up was directed, however, toward a sample returning to a large metropolitan area (in contrast to the nationwide distribution of Robins' sample), and was obtained, on the average, 28 months following return from Vietnam. The Beck Depression Inventory was utilized in order to more throughly evaluate depressive symptomatology, and particular emphasis was placed on the relationship between in-service narcotic use and post-service adjustment when pre-service adjustment as well as age, race and education were controlled.

METHOD

The Sample: Selection of Subjects

Admission to a drug treatment center (DTC) was mandatory for any soldier found to have an opiate positive urine. An opiate positive urine could be detected by drug screening carried out periodically during a soldier's tour (unit sweep) in Vietnam or at time of departure (DEROS) from Vietnam.

Face sheets from all available clinical records of USARV soldiers

admitted to a DTC in Vietnam between June 1971 and December 1972 were screened. An initial population of 10,650 names was available for screening. From this population, all those with emergency addresses in either New Jersey or Pennsylvania, within a 55 mile radius of Philadelphia, were selected. This screening yielded 184 names considered potential subjects for follow-up interviews and comprises the drug positive group.

A control group was obtained by screening 14,780 records of men admitted to one of four USARV hospitals in 1971 and 1972. Those with a DEROS date between June 1971 and December 1972 were included. This insured that both samples served in Vietnam during the same time period. Only patients admitted for problems which were non-drug related were included. This sample contained 127 names of subjects whose emergency addresses met the geographic criteria. A name appearing in both samples was placed in the drug positive group.

The Questionnaire

Between January 15, 1974 and April 15, 1974, the questionnaire which served as the primary data collection instrument for the follow-up interviews was developed. Four major revisions were required before the instrument reached its final form. Each revision was tested on a sample of Vietnam veterans in treatment at the Drug Dependence Treatment Center of the Philadelphia Veterans Administration Hospital. During this period, the techniques of the interviewers were evaluated and refinements of interviewing techniques were made where necessary. By mid-April, the final version of the questionnaire was ready. This version focused on several areas of the subject's background and current life-style. Those topics receiving most

attention included the history of drug and alcohol use; criminal, medical and psychiatric history were also closely examined.

The questionnaire was structured so that each question or sub-question was amenable to computer coding. During the interview, the interviewer could file in each coding blank with the appropriate character, as well as make written comments on those questions that required additional information. Space was also allotted for any pertinent comments from either the subject or the interviewer. The final version of the questionnaire was a semi-structured interview that took one to two hours to administer. The average time of interview was approximately eighty minutes. In addition to the interview, each subject was asked to complete the twenty-one item version of the Beck Depression Inventory (Beck, 1967) and to provide a urine sample for drug screening. Each subject was paid \$15.00 at the completion of the interview.

The purpose of the study was presented at the initial contact with the veteran, and again at the start of the interview. All subjects were assured of the confidentiality of their responses and that no individually identifying data would be reported. Each subject participated voluntarily in the interview.

Methods of Contact

In most cases, the names and addresses of the veterans were accompanied by the name of a contact (wife, parent, or friend) who had been listed as an emergency addressee. Using this information, it was possible to begin to locate the veterans. A standard procedure was used in each case to locate

the veteran. Initially, both the veteran and the contact were looked up in a telephone directory. If there was a corresponding address to the address received from the Army records, the phone number was recorded and contact was attempted by phone. In many cases, it was necessary to use past directories. This made it possible to determine if the contact had moved after the information was provided to the Army by the veteran. If no number could be obtained from a phone directory, a criss-cross directory was used. A criss-cross directory lists phone number by street address. This method proved quite valuable, because in many cases the phone where the veteran lived was listed under a name other than the veteran or the contact.

When a phone number was obtained by either of the above methods, the number was called and initial contact made with the veteran or an associate. In most cases, this would lead to direct contact with the veteran and an interview within a short period of time.

If no phone number could be obtained for a veteran, it was necessary for an interviewer to attempt to contact the veteran directly. An interviewer went to the address listed from the military record, and, if possible, contacted the veteran and scheduled an interview. There were still times that the veteran could not be contacted by means of either phone contact or direct contact, since he no longer resided at the address provided. During initial or subsequent attempts at contact, additional leads were obtained from neighbors, landlords, or real estate agents. Such new information frequently enabled the above described processes to be re-initiated. Forwarding addresses could be obtained from the post office and at times from the United States Army Personnel Center in St. Louis.

For many veterans it required weeks of following every available lead before contact was established. No limit was placed on the number of attempts which would be made in an effort to contact a veteran. Only when all leads were exhausted, and no additional information was available, would a subject be considered inactive.

Completion of Interviews

A total of 202 veterans were contacted and interviewed between April, 1974 and June, 1974. The rate at which interviews were conducted was constrained by the rate at which names were provided by the Department of the Army. A monthly breakdown of when interviews were conducted is as follows: April, 1974 (3); May, 1974 (29); June, 1974 (6); July, 1974 (30); August, 1974 (9); September, 1974 (14); October, 1974 (9); November, 1974 (28); December, 1974 (16); January, 1975 (14); February, 1975 (5); March, 1975 (5); April, 1975 (12); May, 1975 (18); June, 1975 (4). The peaks roughly correspond to the months in which new lists were received.

Table 1 summarizes the dispositions of cases. About three-fourths of the veterans in both study groups were located. Just over 90% of those located in the DTC sample were interviewed. The percentage interviewed in the hospital group was lower (82% of those located were interviewed) because of the higher proportion of subjects still in the service in that sample.

Eighty-three subjects (41%) were contacted directly from the phone book. An additional 60 (30%) were reached by phone after a current telephone number had been obtained by letter or visit at the original address. Therefore, over 70% of the subjects were ultimately contacted and an interview arranged by a phone call. Twenty-seven subjects

were contacted when they phoned the interviewer after receiving a letter requesting them to call. The remaining 32 subjects were contacted by calling at the address provided, by mail, by the subject coming in on his own for treatment at the VA Hospital, or by a combination of methods exclusive of the telephone.

An emphasis was placed on conducting the interview shortly after initial contact was made. Initial contact consisted of verbal or written verification that a subject was available for interview. This included speaking directly to the subject or to a close relative or friend in the same household as the subject. It also included receipt of a returned letter from the veteran indicating that he was available. Sixty-two subjects (31%) were interviewed within three days of initial contact, and over half (107) were interviewed within nine days of contact.

Basic interview characteristics are summarized in Table 2. Interviews were usually held in the subject's home, and were usually private. The typical interview lasted about 1-1/2 hours for subjects in the DTC group, and tended to be about ten minutes shorter in the Hospital group, probably because the inquiry into drug use was shorter for those subjects who lacked experience with drug use. Length of interview was the only objective interview characteristic on which the samples differed.

The interviewers rated the honesty and comprehension of the respondents as at least "medium" in almost all cases, and usually judged them to be "high". They rated the responses of the DTC group as less articulate, perhaps because that group tended to have longer and more detailed interviews, often eliciting more socially undesirable material on drug use and crime. In general, though, the interviewers were satisfied with the quality of the responses given by both groups.

Categorization of Subjects by Narcotic Use During Service

The decision to sample from the DTC and Hospital lists was based on the assumption that this would provide (1) a relatively good sample of drug users, and (2) a more general sample of veterans for comparison which would, at the least, include many who did not use drugs during service. To check on the degree to which the two research populations studied (DTC and Hospital) actually differed in degree of narcotics use in Vietnam, subjects were divided into three groups based on their reported narcotic use during service. If a subject reported significant narcotic use for at least a one month period, a period of addiction or had ever experienced withdrawal symptoms he was classified as a Frequent User (N=98); a subject who reported experimental use of narcotics with no other indications of addiction was classified as an Occasional User (N=55). A subject who reported no experience with narcotics during service was classified as a Non-User (N=49).

While a comparison of this breakdown with the original research grouping (DTC vs. Hospital) indicated a high degree of agreement, as shown in Table 2, the overlap was far from perfect. The eleven Non-Users in the DTC group were admitted to drug treatment centers after an initial positive urine screen. Subsequent examination of these subjects revealed that they were either taking prescribed medication that caused a positive reaction on the urine screen, or that they were false positives on whom all follow-up urine tests were negative. Just over half (51%) of the Hospital sample reported at least some narcotic use in Vietnam, and 21% reported a period of addiction.

Methods of Data Analysis

To what extent could observed differences between the DTC and the Hospital samples be interpreted as due to the greater degree of in-service narcotic use reported in the DTC population? If the reported degree of narcotic use was the causative factor, then those differences would disappear when the narcotic use classification was statistically controlled or partialled out. On the other hand, if differences between DTC and Hospital samples remained when narcotic use was partialled out, that would indicate that the narcotic use dimension would not entirely explain the finding.

Simple and Hierarchical Analyses of Variance

The principal method of analysis of each item was a hierarchical 3x2 two factor analysis of variance, using the classification based on reported narcotic use in service (Frequent, Occasional, and Non-use) and the DTC vs. Hospital classification as design factors. These factors were not independent. Because use of narcotics during service preceded and presumably was a primary cause of the type of treatment received, the factors were studied in a stepwise or hierarchical fashion. First, the significance of the difference between the Hospital and DTC samples was analyzed using a simple t-test. Responses to items which were not continuous scales were recoded and analyzed as dichotomies. Items which were continuous scales were analyzed as such, although in some cases they are presented in the tables as dichotomies for ease of reading.

After the initial analysis, the relationship of each item to the classification of reported narcotic use during service was assessed in an analysis of variance. Finally, the difference between DTC and Hospital groups was

reassessed, with the effects of the drug use classification statistically controlled or partialled out.

In the tables, asterisks by the item titles indicate that significant differences were found between DTC and Hospital groups with the simple t-test, not controlling for differences between the groups in degree of drug use. Where results of the hierarchical analyses of variance are presented, they indicate (1) whether the item in question related to the level of narcotic use during service, and (2) whether the difference between DTC and Hospital samples would be interpreted as due to the underlying factor of narcotics use or not.

Regression Analyses of Post-service Adjustment

Post-service adjustment in nine areas was studied by computing stepwise regression analyses. These analyses considered the importance of several sets of factors in accounting for post-service adjustment scores. The independent variables studied were entered into the analyses in the following order: (1) the demographic factors of age, race and education; (2) the pre-service adjustment in the same area, scored in the same manner as the post-service criterion measure; (3) the degree of narcotic use during service, using the three-group classification based on interview results (Frequent, Occasional and Non-user); and (4) the DTC vs. Hospital classification. After the initial analyses of the demographic items, each factor was studied with all preceding factors held constant statistically. Thus, the multiple regression method permitted sequential evaluation of the prognostic significance of demography, pre-service adjustment, narcotic use during service, and, finally, drug treatment in Vietnam.

Presentation of the Results

In order to determine the effects of drug use in Vietnam on post-service adjustment, it was first necessary to examine differences that existed between samples in the following three areas:

1. General demographic characteristics (age, race, education);
2. Pre-service adjustment;
3. In-service adjustment.

Any differences which exist between those who used drugs during service and those who did not in these areas might well contribute to levels of post-service adjustment. Accordingly, results of analyses in the above areas are presented first. Then, current and adjustment and its correlates in the veterans service and pre-service histories are described.

RESULTS

Age, race and education in the samples

Age, race and educational differences between the two samples are summarized in Table 4. The average age in both groups was about 24 years old; the difference in mean age was trivial. However, the other two variables did significantly differentiate between the samples. Subjects in the DTC group had, on the average, less education, and were less likely to be white.

As the results of the two-factor hierarchical analyses of variance indicate, both education and race were related to the classification of narcotic use during service (poorer education and being non-white predicted higher degrees of narcotic use). The racial differences between DTC and Hospital samples could be accounted for as a result of the underlying narcotic use factor, since the partialled effect was non-significant.

However, the educational difference remained significant even when narcotic use was controlled. This may be interpreted as indicating that relatively poorly educated soldiers were more likely to be admitted to a DTC over and above their classification as Frequent, Occasional, or Non-user of narcotics. Of course, this result may be due to differing patterns of in-service drug use not tapped by the sample narcotic use grouping. Also, more educated soldiers may have been more capable of avoiding detection as drug users.

PRE-SERVICE ADJUSTMENT

Overall Results: Pre-service Data

Table 5 summarizes the results for pre-service variables. Use of alcohol and marijuana were most common, and about 20-30% of each group reported getting drunk at least weekly. Other drugs were used by about 15-20% of each sample, with the exception of heroin. Heroin, the least frequently used drug, was used by fewer than 10% of each group. The average socioeconomic status, computed from reported parental education and occupation, was low in both groups. The average educational level in both samples was less than 12th grade, and was lower in the DTC group than in the Hospital group. Most subjects were employed, but fewer than one-third in skilled jobs or higher. Job levels were particularly low in the DTC sample.

DTC vs. Hospital Comparisons: Pre-service Data

Subjects in the Drug Treatment sample were more likely to have used every drug listed pre-service than Hospital subjects were. However, only the difference in marijuana use was statistically significant. DTC patients had poorer job histories; fewer were employed pre-service, and those who

were tended to be in less skilled jobs with longer work weeks. The average educational level was lower in the DTC group. DTC subjects were more likely to have reported committing at least one crime pre-service. They were also more likely to report that their parents had serious medical problems, and they rated their childhood relationships with their parents as poorer than Hospital subjects did. No other family background items differentiated between samples.

Relationships with In-service Narcotic Use: Pre-service Data

All of the pre-service drug use items significantly predicted level of narcotic use during service. Use of all drugs studied before service was more common among those who subsequently used narcotics during service. Drug use in-service was also predicted by pre-service criminality. Those who used narcotics during service tended to have less education than non-users did. In the group who were addicted during service, 41% had a high school education or more. The comparable statistic for those who used without becoming addicted was 51% high school graduates, and for non-users the percent with high school degrees was 69%. Narcotic users reported poorer childhood relationships with their parents, and more parental medical problems.

Controlling for Narcotic Use: Pre-service Data

Very few items differentiated between DTC and Hospital samples after the narcotic use dimension was controlled. Only the differences in years of education and the rating of the quality of relationship with parents during childhood remained significant.

IN-SERVICE VARIABLESOverall Results: In-service Data

Results for in-service variables are presented in Table 6. The most commonly used drug in both samples in Vietnam was marijuana. Heroin and other narcotics were the next ranked drug in the DTC group, and ranked third (behind alcohol) in frequency of use in the Hospital sample. Alcohol use weekly or more was reported by about 40-45% of the respondents, a drop from pre-service levels.

Although narcotic use was widespread, particularly in the DTC group, the most usual route of administration was smoking. Self-injection of narcotics was relatively uncommon. Even in the DTC group, mainlining of narcotics (intravenous injections) was reported by fewer than 15%, and in the Hospital sample by almost none of the respondents. The majority of subjects in both groups had never mainlined narcotics during service.

About one-half of the respondents rated themselves as generally satisfied with their jobs in Vietnam, substantially more than were satisfied with their non-Vietnam service assignments (28-35%). More than one-half (about 60%) of the veterans had enlisted, but fewer than one in five had re-enlisted. The average subject spent just over one year in Vietnam in all, and fewer than one-half (40-50%) were in combat. Virtually all (99%) of the Hospital sample, and most (84%) of the DTC sample had honorable discharges.

DTS vs. Hospital Comparisons: In-service Data

DTC and Hospital samples differed strikingly in the frequency of use of most drugs studied. All differences were significant excepting those for alcohol and amphetamine use. Other significant results centered in the performance and disciplinary action areas. DTC patients were more likely

to have been demoted. Disciplinary actions were more common in the DTC group. Although the Hospital group was more likely to have suffered a disability, total numbers of hospitalizations and non-drug related contacts with counselors were not different in the two samples.

Relationships with In-service Narcotic Use: In-service Data

First and foremost, soldiers who used narcotics were more likely to have used every drug surveyed except alcohol. Frequent Users were more likely than Occasional Users to have ever mainlined narcotics or to have used a route other than smoking as their usual route of narcotic administration. Narcotic users were more likely to have enlisted in service. All of the items discussed above in the performance and discipline areas related to level of narcotic use during service. Those who used or were addicted to narcotics were more likely to receive undesirable or dishonorable discharges, had lower ranks and received more judicial and non-judicial disciplinary actions, particularly for drug-related offenses and for being AWOL. To a great extent, these adjustment problems experienced by narcotic users and addicts in Vietnam (demotions, discharges, disciplinary actions) were probably direct consequences of their narcotic use, as suggested by a review of the reasons for less than honorable discharges, court-martials, and Article 15s listed by interviewers. Finally, though not statistically significant, Vietnam narcotics users were somewhat less likely to be combat troops than were Non-Users. Their use cannot, therefore, be interpreted as a simple response to combat stresses.

Controlling for Narcotic Use: In-service Data

With a few exceptions, the differences between DTC and Hospital

groups reflected the underlying narcotics use factor. Those items with significant partial correlations were heroin use, discharge type and rank at discharge. Perhaps greater use of heroin within the Frequent and Occasional Use categories was a factor in detection as users. Frequency of heroin use was the only drug use variable on which DTC and Hospital samples differed when the narcotics use classification was controlled.

Even controlling for addiction status, DTC patients tended to be lower in rank and were more likely to be dishonorably discharged. It seems likely that the discovery of narcotic use and not the fact of narcotic use per se was to some degree responsible for these difficulties.

Main Conclusions: Before and During Service

The degree of involvement with narcotics during service related directly to more extensive drug involvement at an earlier age, and to involvement in criminal activities before service. Although in-service narcotics users retrospectively assessed their childhood relationships with parents as relatively poor, other family background items did not predict drug use during service. Neither did pre-service employment data. Of the drugs studied, alcohol and marijuana use were most common pre-service; heroin was used least. Socio-economic status and job levels tended to be low, but most subjects were employed.

In service, the most striking difference between those who used narcotics and those who did not was the greater probability of use by narcotics users of all illicit drugs studied, i.e., all except alcohol.

Interestingly, mainlining of narcotics was relatively uncommon in Vietnam. A variety of disciplinary and job performance problems also characterized the service careers of narcotics users, many of which seemed to be a direct consequence of their drug involvement. However, particularly in the case of more serious disciplinary actions (court martial and stockade), both drug related and non-drug related offenses were more common among both Frequent and Occasional Users of narcotics.

POST SERVICE ADJUSTMENT

Overall Results: Post-service Data

Post-service drug use data is presented in Tables 7 and 8. Just under one-fifth (18%) of the DTC sample, and fewer than one-tenth (8%) of the Hospital sample had a period of narcotic addiction following discharge. Fewer than one-third of the DTC sample and only 9% of the Hospital sample had ever used heroin since discharge from the service.

As shown in Table 7, regular use of alcohol, which had declined during service, increased over baseline levels in both DTC and Hospital samples after service. Increases over pre-service levels of use were also found in both samples in marijuana and amphetamine use. Increases in heroin and barbiturate use were significant only in the DTC sample.

Table 8 summarizes drug use pre and post-service as a function of in-service narcotic use. Increases in regular alcohol and marijuana use cut across all levels of narcotics use. Increases in the use of the other drugs (heroin, amphetamines, barbiturates) were significant only in the Frequent Use group (i.e., among veterans who had a period of addiction during service). A substantial majority of veterans had used marijuana

since discharge. About three-quarters of the subjects were drinking regularly, and about one-fourth reported getting drunk at least weekly. Narcotics use had fallen dramatically from in-service levels, as had addiction to narcotics.

Table 9 presents a breakdown of cases by reported narcotics use in three times periods - before, during and after service. Subjects fell into three groups: (1) those who never used narcotics; (2) those who first used during service; and (3) those who first used prior to service. All veterans who did not use narcotics during service also did not use since discharge. For subjects who first used narcotics during service, the post-service probability of use was 25%. All of the subjects who had first used narcotics before entering service also did so during service. That group had the highest rate of use after discharge (53%).

Table 10 summarizes a variety of post-service adjustment data. Only about one in ten veterans reported the very serious alcohol symptoms of morning drinking or alcohol binges, but at least one episode of memory problems due to drunkenness was not uncommon (18-32%) and at least one sign of alcohol abuse was present in about one-fourth of the Hospital and almost half of the DTC veterans. Positive urine tests were not common for any specific drug, a finding consistent with the generally low levels of current use reported in the interviews.

While employment rates declined somewhat from pre-service levels, most subjects who were employed were satisfied with their jobs, and the percentages in skilled jobs had increased over pre-service levels in both samples. The average patient had had about two jobs since discharge. About one-third of the

DTC sample had committed at least one crime since discharge, and one-fourth of that sample had some current legal problems. Both these percentages were close to 15% in the Hospital group.

Educational benefits were the most frequently used veterans' benefits (30-40%); medical benefits were used almost as much in the Hospital group, less so in the DTC sample. However, the DTC group was more likely to have received drug or alcohol treatment. Hospitalization and employment counseling benefits were used by roughly 10% of the veterans studied.

Many of those interviewed reported some mood problems, particularly in the DTC sample. The average Beck Depression Inventory score was almost 10 in the DTC group (indicating mild depression); two-thirds of them reported recent feelings of depression. Both indices of depression were lower in the Hospital group.

More than half of the subjects in both samples were single, and although the average subject had lived in about two places since discharge, many were currently living with parents, particularly in the DTC group, where almost half of the subjects did so. The numbers of subjects who were church members was dramatically lower than had been reported pre-service, dropping from 90% in childhood to just over one-half in the Hospital sample, and under 40% in the DTC group.

DTC vs. Hospital comparison: post-service data

DTC and Hospital samples differed in almost every area. DTC subjects were more likely to have used all of the illicit drugs listed (heroin, marijuana, hallucinogens, amphetamines, depressants). They were more likely to report signs of at least mild problems with alcohol. They were more likely to give a urine sample which was dirty for some drug, although no specific drug reached significance.

DTC subjects had less skilled jobs when employed, had been employed for shorter periods, and had spent more time since discharge unemployed. As noted above, they reported more criminal activities, more drug or alcohol treatment, poorer health and more depression. They were less likely to be married (30% vs. 47% in the Hospital sample), and more likely to be divorced or separated (16% vs. 6% in the Hospital group). They were more likely to live with their parents, and were less likely to be affiliated with or actively involved in any church.

Relationships with in-service narcotic use: post-service data

Virtually every area of post-service adjustment related to the classification of in-service narcotics use. Use of every drug, including regular alcohol use and drunkenness, mild and serious alcohol abuse signs, and urine tests for methadone, quinine and morphine all were more likely as frequency of use of narcotics during service increased. Narcotic use during service related to poorer vocational status (lower employment rates, shorter employment, longer unemployment). Criminality was higher in the veterans who used narcotics in service, and more of them had current legal problems. Subjects with in-service narcotics experience had more post-service medical and drug treatments, rated their current health and mood as poorer, and had less successful marital adjustments. Across the board, veterans who used narcotics during service were functioning more poorly than subjects who had not used narcotics.

Controlling for narcotics use: post-service data

In almost every case, the DTC vs. Hospital differences were interpretable as due to the underlying narcotic use dimension. Only two items had "significant"

differences between DTC and Hospital samples when in-service narcotics use was controlled. These two findings can reasonably be attributed to chance since over 50 statistical tests were computed. Essentially, no systematic effects of DTC vs. Hospital treatment on post-service adjustment could be found other than those due to the differences between the samples in narcotics use.

Urine tests and reported drug use

Table 11 first summarizes the relationship between the urine tests and the degree of reported post-service narcotics use. As shown, positive urine tests for methadone, morphine and quinine were increasingly likely as the reported frequency of post-service use increased. Positive results for amphetamines and barbiturates were more likely among infrequent users of narcotics than among regular users or non-users.

Also presented are the relationships between urine tests for three specific drugs (morphine, amphetamines, and barbiturates) and the level of reported use of the same drug after discharge. Urine results for morphine and barbiturates were related to reported levels of use; amphetamine results were not. In general, the objective urine data tended to support the validity of the verbal reports.

Multivariate predictions of post-service adjustment

In addition to the Beck Depression Inventory, eight post-service adjustment scores were defined as follows:

1. Job status: Poor=unemployed; Fair=part-time employment; Good=full-time employment or student status.
2. Alcohol abuse, based on 15 signs of abuse: Poor= 3 or more signs present; Fair=one or two signs; Good= no signs of abuse.

3. Criminality: Poor= two or more crimes committed; Fair= shoplifting and/or one major crime; Good= no crimes committed.

4. Narcotics use: Poor=weekly use or more; Fair=less than weekly; Good= no use.

5. Marijuana use: Scored as for Narcotics Use (#4).

6. Hallucinogens: " " " " "

7. Amphetamines: " " " " "

8. Depressants: " " " " "

Stepwise multiple regression analyses were computed with the primary goal of assessing whether the degree of narcotics use during service would predict post-service adjustment even if pre-service adjustment in the same area and subjects' demographic characteristics (age, race, education) were held constant. Results are summarized in Table 12.

Pre-service adjustment was a significant predictor of post-service adjustment in the same area in all cases except Job Status (no pre-service depression measure was available). Nevertheless, the classification of degree of narcotics use during service predicted every criterion even when pre-existing characteristics were controlled. Narcotics use in service was in many cases a more powerful predictor of current status than pre-service status was, even when demographic and pre-service variables were partialled out. The DTC vs. Hospital classification was not related to any outcome criterion apart from its overlap with in-service drug use.

DISCUSSION

Injury, mutilation, amputation and chronic disease are the legacy of Vietnam for thousands of United States veterans. 56,261 men died between January 1, 1961 and March 31, 1973. Amidst this holocaust, one health issue emerged, alarming political leaders and citizenry alike: heroin addiction. Addiction, unlike death, was not confined to the battlefield. Nor, as with the injured, was the public likely to be sheltered from its consequences.

The heroin epidemic occurring roughly between 1970 and 1972 among U.S. personnel in Vietnam was expected to seed a similar epidemic of addiction and, with it, increasing crime and social disorganization in the United States. It is ironic that a similar epidemic of heroin and other drug use was occurring within the U.S. during roughly the same time period. The increasing use of heroin within the U.S. had been documented by Dupont and Greene in 1973. Recently, it has been documented that the peak period of use of all illicit drugs in the United States occurred between 1963 and 1973 (O'Donnell, et al., 1976).

With regard to the returning serviceman and his heroin habit, Robins, et al. (1974), in an extensive study, found that the fear of continuing use of narcotics was largely unfounded. In the Robins study, former U.S. Army personnel were interviewed between 8 and 12 months following their return from Vietnam. Only about two percent indicated that they were currently using narcotics at the time of their interview.

The present study addressed the same issues as the Robins study, but contacted a sample of former U.S. Army personnel at a later period of time, an average of 28 months post-discharge. As with the Robins sample, these

veterans were in Vietnam during the peak periods of heroin use. The present study focused entirely on veterans from the Philadelphia area, in contrast to the national sample of Robins. Particular emphasis was placed on the joint consideration of pre-service adjustment and addiction status in Vietnam in accounting for current adjustment in this study.

The central concern that addicted soldiers would return to the United States and almost inevitably pursue a career of narcotics addiction has not been substantiated by our data. Of those addicted in Vietnam, 38% used a narcotic since discharge, and 24% reported a period of addiction post-service. The percentage actually addicted at some time in the three months immediately prior to the interview was considerably lower (4%). In the groups that had experimented with narcotics in Vietnam without becoming addicted, 11% tried a narcotic since discharge, and 6% reported a period of post-service addiction. None of the soldiers who abstained from narcotic use in Vietnam used a narcotic post-discharge.

Our data compare closely with Robins' data, despite the obvious regional differences in the samples. Robins reported that nearly half the general sample tried narcotics with 20% reporting opiate addiction. In our Hospital samples, 51% reported use, and 21% reported addiction during service. Robins reported that 33% of the drug-positive sample continued narcotic use, and that 19% became addicted after discharge. In our DTC sample, 29% reported some continuing use of heroin after service, and 18% reported a period of addiction. Even among those reporting addiction while in Vietnam, only 24% reported a period of re-addiction after service.

Of particular interest is the relationship between narcotic use in Vietnam and use since return from the service. Although overall levels of use have declined dramatically, our data provides strong support for the contention that narcotic use in Vietnam was a contributing factor to continuing drug use at home. Narcotic use since discharge correlated significantly with the classification of narcotic use in Vietnam even when age, race, education and pre-service use of narcotics were held statistically constant.

Four major findings stand out above all.

1. The great majority of veterans in both DTC and Hospital samples who had used narcotics during their service careers, even those who reported periods of addiction during service, did not relapse after returning home. In contrast to the experience of narcotics use in the US as a virtually impossible habit to break, most did not continue the habit in a different environment.

2. On the other hand, narcotic use in service did have serious and unfortunate consequences. Narcotics and other drug use after service increased over pre-service levels, if not as dramatically as might have been anticipated from the levels of in-service use.

3. Further, and perhaps most important, a wide range of adjustment variables, indexing social and personal adjustment, crime and drug use were systematically related to in-service narcotic use. In virtually every area studied, veterans who used narcotics during service were seen to be functioning more poorly than those who had not, even when demographic differences and pre-service level of adjustment were controlled. Vietnam drug users were

using more illicit drugs, most notably heroin, and had more involvement in crime. They had poorer employment records, and had more alcohol problems. Their emotional, physical and marital adjustments were poorer than those of veterans who did not use narcotics during service. While drug involvement in Vietnam was far from the inevitably disabling problem many anticipated, its negative consequences for many veterans were significant.

4. The differences observed between the DTC and the Hospital samples were almost all interpretable as due to the underlying drug use differences between the groups. When addiction status in-service was held constant, drug vs. hospital treatment in Vietnam did not relate to any outcome criterion. There was essentially no evidence of any substantial impact of treatment group, positive or negative, on subsequent adjustment of veterans at each level of narcotic use during service.

TABLE 1
Disposition of Subjects

	<u>DTC</u>	<u>Hospital</u>
<u>1. Number located</u>	<u>138 (75%)</u>	<u>94 (74%)</u>
1. Interviewed	125	77
2. Not interviewed	13	17
a. refused	3	1
b. still in service	6	15
c. dead	1	0
d. in jail	3	1
<u>II. Number not located</u>	<u>46 (25%)</u>	<u>33 (26%)</u>
1. Moved	28	17
2. Unknown	18	16
TOTAL	184	127

TABLE 2
In-service narcotic use in
DTC and Hospital samples

<u>Level of Narcotic Use^a</u>	<u>DTC N=125</u>	<u>Hospital N=77</u>
Frequent	66%	21%
Occasional	26%	30%
Non-user	9%	49%

^a Levels of narcotic use defined in text. $p < .01$ for the degree of association between these two classification systems.

TABLE 3

INTERVIEW CHARACTERISTICSStudy Group

	<u>DTC (N=125)</u>	<u>Hospital (N=77)</u>
<u>Length (Minutes)**</u>	86	78
<u>Location</u>		
Ss home	86%	87%
Ss office	1%	1%
Interviews Office	10%	9%
Other	3%	3%
<u>Interviews</u>		
A	54%	48%
B	46%	52%
<u>Area</u>		
Philadelphia	58%	47%
Penna.	33%	47%
N.J.	9%	6%
<u>Privacy during intake</u>		
Yes	82%	84%
Most of the time	13%	13%
No	6%	3%

TABLE 3 (continued)

Interviewer's ratings

Honesty

High	72%	77%
Medium	26	23
Low	2	0

Understanding of questions

High	66%	73%
Medium	30	26
Low	3	1

Ability to articulate
answers *

High	49%	65%
Medium	47	32
Low	4	3

** < .001

*p < .05

TABLE 4

Age, race and education of
two study groups

Variable	<u>Study group</u>		<u>p-level in Hierarchical analyses</u>	
	DTC (N=125)	Hospital (N=77)	VN narcotic use	DTC/Hosp (partial)
Age	24	24	ns	ns
Highest grade **	11.4	12.2	< .001	< .05
% white *	51%	71%	< .05	ns

* $p < .01$
** $p < .001$

TABLE 5

Pre-service Adjustment in The Groups

<u>Variable</u>	<u>Study group</u>		<u>p-level in Hierarchical Analyses</u>	
	<u>DDTC (N=125)</u>	<u>Hospital (N=77)</u>	<u>VN narcotic use</u>	<u>DTC/Hosp. (partial</u>
<u>Drug Use</u>				
Drink weekly or more	66%	51%	<.05	ns
Drink " "	30%	23%	<.01	ns
Narcotic	9%	5%	<.05	ns
Marijuana**	58%	38%	<.001	ns
Hallucinogen	20%	12%	<.001	ns
Amphetamine	23%	14%	<.001	ns
Depressant	18%	9%	<.001	ns
<u>Vocational data</u>				
Employed*	71%	83%	ns	ns
If employed, skilled job or more*	16%	33%	ns	ns
If employed, hours work/week*	39.4	36.6	ns	ns
# jobs pre-service	2.2	2.3	ns	ns
Years of education **	11.0	11.8	<.001	<.03
Ever repeat a grade	44%	31%	ns	ns
<u>Criminality</u>				
Any crimes committed**	49%	27%	<.001	ns
Drug possession	23%	22%	<.001	ns

TABLE 5 Continued

Pre-Service Adjustment

	<u>Study group</u>		<u>p-level from Hierarchical analyses</u>	
	<u>DTC</u>	<u>Hospital</u>	<u>VN narcotic use</u>	<u>DTC/Hosp. (partial r)</u>
<u>Family background</u>				
Live with both parents until 16	58%	66%	ns	ns
Parents occupation skilled or more	46%	51%	ns	ns
Parents' education HS or more	40%	39%	ns	ns
Hollingshead Redlich SES category	1.6	1.7	ns	ns
Belonged to a church	90%	90%	ns	ns
Relationship with parents (5 pt. rating) "very good" or "excellent" **	45%	60%	<.02	<.05
<u>Parents' problems</u>				
Alcohol	23%	20%	ns	ns
Financial	29%	18%	ns	ns
Medical	40%	21%	<.02	ns
Emotional illness	11%	7%	ns	ns
<u>Siblings problems</u>				
Drugs	9%	5%	ns	ns
Legal	15%	13%	ns	ns
Medical	12%	12%	ns	ns

*p<.05

**p<.01

TABLE 6
In-Service Careers

<u>Variable</u>	<u>Study group</u>		<u>p-level in Hierarchical analyses</u>	
	<u>DTC</u>	<u>Hospital</u>	<u>VN narcotic use</u>	<u>DTC/Hosp. (partial)</u>
<u>Drug Use in Vietnam</u>				
Drank weekly or more	41%	44%	ns	ns
Drunk weekly or more	10%	14%	ns	ns
Marijuana ***	93%	71%	< .001	ns
Hallucinogen *	25%	13%	< .005	ns
Amphetamine	34%	21%	< .001	ns
Depressant *	46%	17%	< .001	ns
Heroin ***	85%	35%	< .001	< .001
Opium *	58%	29%	< .001	ns
Opium and marijuana***	66%	35%	< .001	ns
<u>Positive urine screen</u>				
Any drug screen ***	86%	17%	< .001	< .001
DEROS screen ***	66%	14%	< .001	< .001
<u>General service data</u>				
Combat duty	37%	51%	ns	ns
Enlisted	62%	57%	< .05	ns
Months in VN	12.9	12.6	ns	ns
<u>Satisfaction with service (5 point rating)</u>				
with job in VN > 1/2 the time	56%	53%	ns	ns
with NonVN service				
> 1/2 the time	28%	35%	ns	ns
Re-enlisted	15%	17%	ns	ns

TABLE 6 (Continued)

			<u>VN narcotic use</u>	<u>DTC/Hosp. (partial)</u>
<u>Service performance</u>				
Honorable discharge***	84%	99%	< .02	< .03
Highest rank ***	4.1	4.4	< .01	< .03
Discharge rank ***	3.1	4.1	< .001	< .002
Promoted in service***	69%	74%	ns	ns
Demoted in service ***	30%	10%	< .001	ns
Awarded medals	52%	57%	ns	ns
<u>Disciplinary actions</u>				
in Stockade *	28%	13%	< .001	ns
# article 15***	2.4	1.2	< .001	ns
# court martials	.2	.1	ns	ns
<u>Medical treatments in and after VN</u>				
# times hospitalized	1.7	1.7	ns	ns
# times counseling (non-drug problems)	.4	.5	ns	ns
Disability *	10%	22%	< .01	ns

TABLE 6 (Continued)

	<u>DTC</u>	<u>Hospital</u>	p-level in <u>Hierarchical analyses</u>	
			<u>VN narcotic use</u>	<u>DTC/Hosp.</u> <u>(partial)</u>
<u>Usual route of^a</u> <u>administration*</u>			< .01	ns
Mainline	14%	3%		
Snort	20%	11%		
Oral	1%	0%		
Smoke	65%	86%		
<u>Ever mainline narcotics</u> * ^a	34%	17%	< .02	ns

* $p < .05$
 ** $p < .01$
 *** $p < .001$

^aUsers only. Ns are 114 in the DTC group and 36 in the Hospital sample.

TABLE 7

Drug use pre-service, in VN, and Post-service

Drug	DTC group (N=125)			Hospital group N=77)		
	Pre-service	In VN	Post-service	Pre-service	In VN	Post-svc.
Drink weekly or more	66%	41%	78%	51%	44%	75%***
Drunk weekly or more	30%	10%	24% ns	23%	14%	23% ns
Heroin	9%	85%	29%***	5%	35%	9% ns
Marijuana	58%	93%	83%***	38%	71%	69%***
Hallucinogen	20%	25%	27% ns	12%	13%	14% ns
Amphetamine	23%	35%	45%***	14%	21%	25%*
Depressant	18%	46%	34%**	9%	17%	12% ns
Narcotic addiction	-	66%	18%	-	21%	8%

Note - Statistical tests compare post-service level with pre-service level

* $p < .05$
 ** $p < .01$
 *** $p < .001$

TABLE 8

Drug use Pre and Post Service as a
Function of In-Service Narcotic
Use

	Level of in-service narcotic use					
	Frequent (N=98)		Occasional (N=55)		None (N=49)	
	Pre	Post	Pre	Post	Pre	Post
Drunk weekly	65%	85%***	67%	71%	41%	69%**
Drunk weekly	35%	33%	29%	18%	12%	12%
Heroin	12%	38%***	5%	11%	0%	0%
Marijuana	67%	89%***	53%	93%***	12%	39%***
Hallucinogen	24%	30%	18%	27%	0%	2%
Amphetamines	29%	54%***	20%	36%	2%	4%
Depressants	22%	42%**	13%	18%	0%	2%

Note - Statistical tests compare post-service levels with pre-service level

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

TABLE 9

Narcotic use before, during and after service

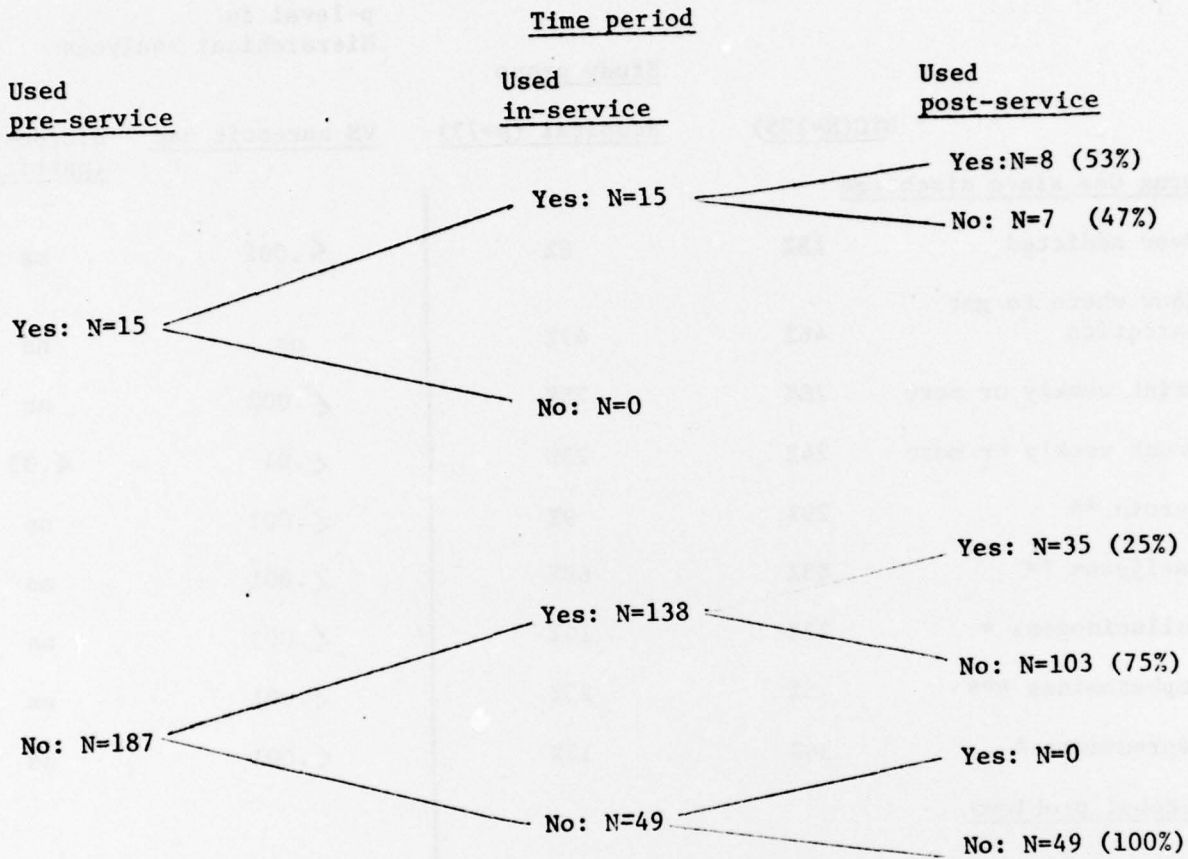


TABLE 10

Post-service Adjustment

		<u>Study group</u>		p-level in Hierarchical analyses	
	<u>DTC(N=125)</u>	<u>Hospital (N=77)</u>	<u>VN narcotic use</u>	<u>DTC/Hosp. (partial r)</u>	
<u>Drug Use since discharge</u>					
Ever addicted	18%	8%	<.001	ns	
Know where to get narcotics	46%	47%	ns	ns	
Drink weekly or more	78%	75%	<.002	ns	
Drunk weekly or more	24%	23%	<.01	<.03	
Heroin **	29%	9%	<.001	ns	
Marijuana **	83%	69%	<.001	ns	
Hallucinogens *	27%	14%	<.003	ns	
Amphetamines ***	45%	25%	<.001	ns	
Depressants *	34%	12%	<.001	ns	
<u>Alcohol problems</u>					
Ever morning drinker	12%	6%	<.01	ns	
Binged for days	15%	9%	<.001	ns	
Memory problems *	32%	18%	<.001	ns	
Signs of abuse *	46%	29%	<.001	ns	
<u>Urine test at follow-up (N=199)</u>					
Methadone	6%	2%	<.04	ns	
Quinine	15%	6%	<.002	ns	
Morphine	8%	3%	<.04	ns	

TABLE 10 (Continued)

	<u>Study group</u>		<u>p-level in Hierarchial analyses</u>	
	<u>DTC (N=125)</u>	<u>Hospital (N=77)</u>	<u>VN narcotic use</u>	<u>DTC/Hosp. (Partial)</u>
<u>Urine test at follow-up</u>				
Codine	1%	0%	ns	ns
Cocaine	0%	0%	ns	ns
Amphetamine	8%	5%	ns	ns
Barbiturates	6%	1%	ns	ns
Other	7%	5%	ns	ns
Any dirty urines*	34%	20%	< .01	ns
<u>Vocational data</u>				
Employed	54%	66%	.02	ns
<u>If employed:</u>				
Job level skilled or more*	29%	49%	ns	ns
Satisfied with job	81%	84%	ns	ns
months working	13.3	14.9	ns	ns
salary	\$156	\$172	ns	ns
#jobs since discharge	2.0	1.6	ns	ns
longest time held job post-service*	11.9 months	15.2 months	< .002	ns
longest time un-employed post-service*	7.1 months	5.2 months	< .01	ns

TABLE 10 (Continued)

	<u>Post Service</u>		<u>p-level in</u>	
	<u>Study group</u>		<u>Hierarchical analyses</u>	
	<u>DTC (N=125)</u>	<u>Hosp (N=77)</u>	<u>VN narcotics</u>	<u>DTC/Hosp</u> <u>(partial)</u>
<u>Health self ratings</u>				
Beck Depression Inventory**	9.6	6.3	< .001	ns
Physical health "very good" or "excellent" (5 pt scale)*	70%	84%	< .001	ns
Self-rating depressed last 3 mos**	66%	44%	ns	< .05
Self-rating Sex problems	10%	8%	ns	ns
<u>Family life and Social Adjustment</u>				
Married*	30%	47%	< .02	ns
Separated/divorced	16%	6%	< .02	ns
Live with parents*	46%	31%	ns	ns
#places lived post- service	2.2	1.9	< .01	ns
Months at address	14.6	15.3	ns	ns
Church member**	37%	57%	< .001	ns
Attend church***	31%	53%	< .001	ns
Registered voter	38%	43%	ns	ns

* $p < .05$ ** $p < .01$ *** $p < .001$

TABLE 10 (continued)

Post-Service

	<u>Study group</u>		<u>p-level in Hierarchial analyses</u>	
	<u>DTC(N=125)</u>	<u>Hosp (N=77)</u>	<u>VN narcotic</u>	<u>DTC/Hosp (partial)</u>
<u>Criminality</u>				
Any crimes committed*	34%	14%	< .001	ns
Legal Status clear*	74%	87%	< .001	ns
<u>Used gov't benefits</u>				
Educational	30%	39%	ns	ns
Medical*	21%	34%	ns	ns
Hospital	14%	10%	ns	ns
Employment counseling	9%	12%	ns	ns
<u>Medical treatments</u>				
# times hopsitalized*	.4	.2	< .05	ns
Drug or alcohol treatment*	12%	4%	< .01	ns
Seen doctor in last 6 months	42%	44%	ns	ns
# times talk to counselor (non-drug)	.3	.2	ns	ns

TABLE 11

I. Percent with positive urine test results
by reported level of narcotic use post-service (N=199)^a

	Weekly use or more	less than weekly use	Never used Post-service
<u>Positive urine for:</u>	<u>(N=31)</u>	<u>(N=18)</u>	<u>(N=150)</u>
Methadone**	19%	11%	1%
Quinine**	39%	11%	6%
Morphine**	23%	6%	3%
Codine	0%	0%	1%
Cocaine	0%	0%	0%
Amphetamine	3%	17%	7%
Barbiturates	6%	17%	2%
Any drug**	58%	50%	19%

II. Percent with positive urine test results by reported
level of use of same drug post-service

	Weekly use or more	less than weekly use	Never used Post-service
<u>Positive urine for:</u>			
Morphine**	23%	6%	3%
Amphetamine	8%	6%	7%
Barbiturates ^b	18%	5%	3%

** $p < .01$

^aThree respondents were not tested.

^bAlthough $X^2 = 6.5$ ($p < .05$), low cell-frequencies suggest caution in interpreting p-level.

TABLE 12

Stepwise Predictions of post service adjustment

Correlations of Predictors with criteria^a

	Demography	Pre-service Status	In-service narcotic use	DTC vs. Hospital
Beck Depression Inv.	Educ: low** .25 (.25) Race: non-white** .21 (.24)	-b-	.24** (.33)	ns
Criminality	ns	.20** (.22)	.23** (.31)	ns
Job status	Educ.: high** .17 (.17)	ns	.17* (.22)	ns
Alcohol abuse signs	ns	.29** (.29)	.38** (.42)	ns
Narcotic use	Race: non-white** .28 (.29)	.22** (.20)	.33** (.41)	ns
Marijuana use	Race: non-white* .15 (.15)	.42** (.41)	.38** (.55)	ns
Hallucinogen use	ns	.15* (.15)	.22** (.27)	ns
Amphetamine use	ns	.28** (.27)	.34** (.41)	ns
Depressant Use	ns	.31** (.30)	.31** (.37)	ns

* $p < .05$ ** $p < .01$

^a Predictors of current adjustment were entered in four steps: Step 1 - age, race education; Step 2 - pre-service status on the criterion variable, Step 3 In-service narcotic use; Step 4 - DTC vs. Hospital classification. Correlations with criteria have all variable from the same or earlier steps partialled. Correlations in parentheses are zero-order correlations, without partialling of other variables. For example, narcotic use in-service correlated .55 with post-service marijuana use. When age, race, education and pre-service marijuana users were statistically controlled (partialled) the correlation was .38.

^b Not obtained pre-service

APPENDIX I

Raw data for major variables for 202 cases

The cases in the DTC group are listed first, followed by the Hospital group patients. Within groups, cases are ordered by frequency of narcotic use during service (Frequent Users, Occasional Users, Non-Users). Subject CN did not take the Beck Depression Inventory.

Variable

Coding

- | | |
|-------------------------------|--|
| 1. ID code | |
| 2. Year of birth | |
| 3. Years of education | |
| 4. Race | 0=Non-white; 1=white |
| 5. Study population | 1=DTC; 2=Hospital |
| 6. Vietnam narcotic use group | 1=Frequent User; 2=Occasional User; 3=Non-user |

Post-service criteria (high scores are good, except on the Beck Depression Inventory #15)

- | | | | |
|--|---|--------------------|----------|
| 7. Narcotic use | 0=weekly or more | 1=less than weekly | 2=never. |
| 8. Marijuana use | 0= " " | 1= " " | 2= " " |
| 9. Hallucinogen use | 0= " " | 1= " " | 2= " " |
| 10. Amphetamine Use | 0= " " | 1= " " | 2= " " |
| 11. Barbiturate Use | 0= " " | 1= " " | 2= " " |
| 12. Alcohol abuse signs | 1= 3 or more; | 2= 1 - 2; | 3= none. |
| 13. # Crimes committed | 1= 4 or more; | 2= 1 - 3; | 3= none. |
| 14. Job/school status | 1=unemployed; 2=part-time; 3=full time or student | | |
| 15. Beck Depression Inventory (N=201) scores range from 0-44 (high=more depression). | | | |

Pre-Service adjustment (high scores are good).

- | | | |
|-----------------------|---|-----------------------------|
| 16. Narcotic use | 0=ever used; | 1=never used |
| 17. Marijuana use | 0=weekly or more; | 1=less than weekly 2=never. |
| 18. Hallucinogen Use | 0= " " | 1= " " |
| 19. Amphetamine Use | 0= " " | 1= " " |
| 20. Barbiturate Use | 0= " " | 1= " " |
| 21. Alcohol Use | 0= " " | 1= " " |
| 22. #Crimes committed | 1= 4 or more; | 2= 1 - 2; 3= none. |
| 23. Job/school status | 1=unemployed; 2=part-time; 3=full time or student | |

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APPENDIX I (cont'd)

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V

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