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Marijuana in Vietnam

A Survey of Use Among Army Enlisted Men in the Two Southern Corps

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American military concern with marijuana was noted in the 1920's, at which time marijuana use among soldiers in the Panama Canal Zone was recorded. Freedman and Rockmore (1946) comment:

> In 1928 the medical officers of that command, at the request of the Commanding General, undertook a study of a year's duration and concluded that the effects upon military efficiency and discipline were practically negligible. In 1930 a new Commanding General created a board for further investigation, which hospitalized a group of marijuana smokers, gave them unlimited opportunity for

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indulgence, and made close observations on the physiological process and the behavior of these men. The conclusions of this board were in full harmony with those of the Department Surgeon the year before.

More recently, American concern has been manifested by university administrators, high school principals, the courts, law-enforcement officials, members of the clergy, physicians and health-oriented organizations, parent groups, legislators, military authorities, and others. Increasing reference has been made in the public media to the widespread use of marijuana and, while there has been fairly extensive anecdotal mention of its availability to and use among various age groups, relatively little adequate sociological research has been published. Most of the published material has described informal student press surveys and the estimates of participant-observers in various settings.* When compared, there have been several instances of significant differences between the findings of participant-observers and those of social science researchers.

The National Institute of Mental Health has been a major source of support for scientific assessment of both biochemical and social effects of drug use.† The Director of NIMH (Yolles, 1968) reported to the Senate Subcommittee on Juvenile Delinquency:

> Under NIMH contract support a survey instrument for more accurately assessing the prevalence of drug abuse in high school and college populations has been developed. On the basis of successful pilot studies with this instrument a grant proposal for a five-year study is pending review by the National Advisory Mental Health Council at its meeting next month.‡

* The following references will be of interest as representative: The results of a poll taken by the *Yale Daily News* in 1967 and published in that newspaper; Steinbeck IV, J. The importance of being stoned in Vietnam, *The Washingtonian,* 3: 33, January 1968; a 1968 campus survey at The Old Dominion College is reported in its student newspaper *The Mace and Crown;* published in 1968 (August) were the results of a *Los Angeles Times* survey of Palos Verdes, California, public schools; also, see Marijuana: making its presence felt, *Yale Alumni Magazine,* 30: 10–11, May 1967.

† See the statement of Dr. Stanley F. Yolles, Director, NIHM, given before the Senate Subcommittee on Juvenile Delinquency on March 6, 1968. Dr. Yolles reported that, "The National Institute of Mental Health has supported several studies in this area with a yearly expenditure of $750,000 in the fiscal year of 1967."

‡ Because of the untimely death of the two primary researchers, the granting of the study award was postponed. The model for the study was later adopted by another research group which received the grant award in September, 1969 (Dr. Jack Elinson, School of Public Health, Columbia University, New York).

RECENT CIVILIAN RESEARCH

In a recent letter to the authors, Dr. Henry Brill summarized his review of current marijuana research concerning college students as follows:

> In summary I would say that there is good reason to project a figure of 20 to 30% [of students who had used marijuana] but this should be taken correctly in context. It refers to all persons exposed even on a single occasion. It does not mean that this is the number of chronic serious users.

Dr. Stanley F. Yolles (1968), Director of the National Institute of Mental Health, in testimony given before the Senate Subcommittee on Juvenile Delinquency in March of 1968, stated:

> Surveys of high school and college drug use indicate that approximately 20% of the college students questioned reported some experience with marijuana. It is estimated that about two million high school and college students have had some experience with marijuana.

The studies which will be cited below were performed in 1967 and early 1968, and in part provide the basis for both of the above estimations. Several were carried out at approximately the same time as the present research.

Kenneth Eells (1968), a psychologist with the California Institute of Technology, in March of 1967 administered an anonymous questionnaire to the Institute's all-male student body receiving a 90% (N = 1290) return. Reporting marijuana use one or more times were 19.8% (N = 127) of the undergraduates and 7.7% (N = 50) of the graduate students. It is interesting to note that a much higher percentage of undergraduates residing off-campus (35.0%; N = 56) had smoked the substance than had on-campus undergraduates (14.2%; N = 66). This variation may reflect the composition of the on-campus group as including the younger undergraduates who on many college campuses are required to reside on campus during the first year or years of school. Eells further analyzed his results in terms of academic year, discovering that 7.4% (N = 14) of the freshmen, 22.6% (N = 36) of the sophomores, 32.2% (N = 46) of the juniors, 19.2% (N = 26) of the seniors, 8.3% (N = 26) of the first and second year graduate students, and 6.6% (N = 20) of the additional graduate students had smoked marijuana.* With reference to time of starting marijuana use,

* Balter (1967) notes the decreasing incidence of use reflected by seniors and graduate students as found by Eells and other researchers. He comments: ". . . it

85% (N = 108) of the users in his undergraduate population reported first use as college undergraduates, 9% (N = 11) starting in high school or earlier, and 6% (N = 8) starting after completing high school, but before entering college.

Eells also asked his respondents about their plans for future use of marijuana. Those who said they would definitely not use marijuana in the future were as follows: 71% of the non-drug-users, 25% of the casual marijuana users (those who reported having smoked marijuana once or twice only), 1% of the steady and current marijuana users (those reporting marijuana use three or more times, with the last time being within the past six months), and none of the heavy marijuana users (those who reported use on ten or more occasions).

Studies by Richard and Ava Blum (1969) at the Institute of Human Problems at Stanford University in 1967 concluded that 18% of all students had used marijuana. Sampling approximately 250 to 300 of the undergraduates at each of five co-educational west coast colleges and universities, the authors found from 10 to 33% of the students reporting use. Academic year percentages similar to those found by Eells were obtained by the Blums with the exception that seniors reported higher usage than did other undergraduates. The analysis by year in school revealed 11% of the freshmen, 17% of the sophomores, 22% of the juniors, 29% of the seniors, and 10% of the graduate students having smoked marijuana.

Imperi *et al.* (1968) reported the results of surveys at Yale and Wesleyan Universities performed in 1967. Ten per cent of the Yale undergraduates and 33% of the Wesleyan undergraduates were randomly selected to be polled by means of anonymous questionnaires. Eighteen per cent (N = 59) of the Yale respondents and 20% (N = 50) of those from Wesleyan reported having tried marijuana at least once. Approximately one in five students at each institution reported having smoked marijuana only once. Forty per cent (N = 20) of the Wes-

would show . . . a cut-down phenomenon as they approach life and getting out of school and going to work. There is a tendency to put on your sport jacket and take your rightful place in society." This explanation, however, neglects to consider why the upperclassmen had not experimented with marijuana when they were younger. It is quite possible that the cultural value system influencing college students had not been as permissive regarding marijuana in the preceding years when Eells' upperclassmen were in their beginning college years. The statistics might also be based on marijuana smokers dropping out of school before reaching the upper classes. Finally, the approaching career investment of upperclassmen may have resulted in a lessened willingness to admit to an illegal act due to the possible legal dangers.

leyan users and 19% (N = 11) of the Yale users had smoked marijuana more than ten times.

Imperi found that 24% (N = 64) of the Yale nonusers and 27% (N = 54) of the Wesleyan nonusers had seriously considered trying marijuana.

Kleber and Davie (unpublished) in the spring of 1963, conducted another survey at Yale using a 10% random sample of the undergraduate student body. With a 61% return rate, they found that 49% admitted to use of marijuana. Following a preliminary analysis of the data, Kleber wrote the following to the author (RR): "This 49% breaks down into approximately two-thirds light use defined as ten times or less use of marijuana and approximately one-third who had used this drug more heavily. Roughly one-half of the group . . . had used more than just marijuana, e.g., LSD, hashish, and peyote."

Dr. Dana Farnsworth (personal communication) in reviewing surveys of Harvard College student use of marijuana, estimates the percentage for on-campus students to be in the neighborhood of 30%. He comments:

> This statement is based mainly on unofficial surveys made in various houses at Harvard College over the past two years. There is a tendency for each succeeding survey to show a somewhat larger percentage of usage than the previous one but this is not consistent. The highest survey with which I am familiar was 53%.

A major effort involving a cross-sectional home interview survey of the noninstitutionalized adult population of San Francisco was recently completed by the Family Research Center of the Langley Porter Neuropsychiatric Institute (Manheimer *et al.,* 1969). This research drew on a random sample of 1104 San Franciscan adults 18 years of age and older, and examined (among others) the following variables as associated with marijuana use: age, sex, education, income, race, religion, place of birth, marital status, and alcohol drinking pattern. The data was obtained in the fall and winter of 1967. The proportion of San Franciscan adult males under 35 years of age who had ever used marijuana was 36%. Of the males between the ages of 18 and 24, the proportion was 49%.

U. S. ARMY RESEARCH

During and shortly after World War II, the results of two Army research studies were published. They are of interest primarily because they provide a chronicle of Army investigation concerning marijuana.

The reader will note that these studies focus on the effects of drug use rather than on incidence and prevalence of the phenomenon.

Marcovitz and Myers (1944) reported observation of 35 marijuana smokers, all of whom were considered seriously ill and were thus hospitalized. They discussed both the difficulties that these individuals presented in the military setting and methods of dealing with the problem. They summarize:

> Thirty-five confirmed marijuana addicts came under observation during a period of seven months at an Army Air Forces regional station hospital. They present a serious problem in their failure to perform any useful duties, in breaches of discipline, in constant need for medical attention, in consistent failure to respond favorably to disciplinary measures or to attempts at rehabilitation and in their disruptive effect on the morale of their organization.
>
> Thirty-four were Negroes, and one was of the white race. As a group, their backgrounds were heavily loaded with adverse familial, social and economic factors. Their histories were characterized by delinquent and criminal behavior and failure to develop any consistent patterns of productive work. In effect, they felt and acted like enemy aliens toward society.
>
> The personality pictures of such addicts show a typical pattern of response to repeated situations of frustration and deprivation. This consists, on the one hand, of immediate and constant gratification of the need for sensual pleasure and for the feeling of omnipotence, as well as the need to overcome their unbearable anxiety. On the other hand, they show hostility and aggression toward others, especially to authority, with the neurotic repetitive creation of situations which lead to further suffering.
>
> The addictive smoking of marijuana serves simultaneously as a satisfaction of all these drives. It is but one aspect of a complex picture of maladjustment.
>
> It is concluded that the problem of disposition of confirmed marijuana addicts of the type described here cannot be solved adequately by punishment, short term imprisonment or discharge from the service.
>
> It is recommended that government institutions be created to which such confirmed marijuana addicts may be committed for long term treatment and rehabilitation or for indefinite custody.

Freedman and Rockmore (1946), using a sample of 310 marijuana smoking soldiers seen at a Mental Hygiene Division, focused on a demographic description of these drug users and traced individual dynamics of personality in terms of the outcome of marijuana use. These authors concluded that the investigation of marijuana use should be but one aspect in the evaluation of individual psychodynamics and behavior.

> It is our feeling that continued emphasis should be placed on the basic personality structure of the individual who uses the drug rather than on the fact

that the drug is used. Such a focus is required and individual clinical examination is necessary in order to understand and evaluate the relationship of the use of marijuana to behavior. To proceed otherwise might end in unwarrantedly attributing to marijuana the quality of producing unacceptable behavior or in limiting inquiry to crime as the end result of its use.

In considering the effects of marijuana use on the soldier's performance in the service, the authors stated, "It is felt that the factor of the individual's use of marijuana was not the determinant of the quality nor duration of his military service, although its influence may be contributory."

Siler *et al.*, in a 1933 issue of *The Military Surgeon,* document steps taken from 1923 to 1932 by American military authorities in Panama to evaluate the effects of marijuana use. During this period, military regulations were changed several times, at times prohibiting use of marijuana, and at other times ignoring the phenomenon.

The war in the Republic of Vietnam and the consequent deployment of over one-half million American soldiers to that country have given rise to renewed concern regarding drug abuse. Shortly after numerous press articles reported widespead marijuana smoking among members of the military in Vietnam, a Department of Defense Task Force was created in 1967 to report on drug abuse in the Armed Forces (Bartimo, 1967).

In June of 1967, one of the present authors (RR) was asked by a representative of the United States Army Vietnam (USARV) Provost Marshal to study the use of marijuana by military personnel confined in the USARV Stockade at Long Binh, Vietnam. The results of this research (Roffman, unpublished) are contained in a paper submitted through command channels to both the USARV Surgeon and the USARV Provost Marshal on 15 July 1967.

The stockade study, in addition to providing a demographic description of those marijuana smokers and nonsmokers presently confined, addressed itself to questions about initial exposure as well as incidence and frequency of use occurring concomitant with assignment in Vietnam. Sixty-three per cent (N = 60) of the stockade population, excluding 21 prisoners who had been convicted of a marijuana offense, admitted to having used marijuana at least once in their lives. Forty-five per cent (N = 27) of this subsample had first used marijuana prior to entrance on active duty, 10% (N = 6) since entering the service, and 45% (N = 27) since arriving in Vietnam. Eighty per cent (N = 16; 4.9% of the population incarcerated as of 1 July 1967) of those

prisoners who had been convicted of a marijuana offense stated that they had first used the substance prior to entrance on active duty.

This study gave some indication of the pattern of marijuana availability and use among that segment of the total population which was encountering difficulty in effectively coping with the military and/or combat zone experience. The immediate consequence of this study was the development of interest in gathering data relevant to the noninstitutionalized population.

Early in 1967, the Psychiatric Consultant to the USARV Surgeon urged the professional staff of the 935th Medical Detachment (KO) to undertake a study of marijuana use. The Consultant expressed his belief that the development of an effective response to the drug abuse problem required accurate knowledge of its prevalence. His interest, and that of the USARV Surgeon, led to the wider study herein reported.*

One additional study (Casper *et al.*, unpublished) was performed by the Americal Division Mental Hygiene (MHCS) Staff in July 1968. These researchers examined incidence and frequency of use among soldiers referred to the Mental Hygiene Clinic (N = 46), soldiers seen for medical problems at a dispensary (N = 268), a group of soldiers arriving in Vietnam (N = 234), and a group of soldiers departing for the United States after completing a tour of duty (N = 223). Of the total sample (N = 771), 31.3% had used marijuana. Excluding the 234 respondents who had newly arrived in Vietnam, 32.8% of the remaining sample had used the drug. Of the 223 subjects leaving Vietnam after completing a tour of duty, 20.6% were "users." The highest proportion of "users" occurred in the subsample of MHCS psychiatric out-patients: 52.2%. Beginning marijuana use for the first time in Vietnam were 47.7% of all "users."

PURPOSE OF THIS STUDY

The illicit use of drugs has been viewed as threatening and dangerous throughout society both in terms of general health and welfare and of unique issues related to specific settings in which drug abuse occurs. On the college campus, the association of drug abuse with eventual withdrawal from classes has been noted with alarm.† Within the mili-

* The Psychiatric Consultant stated that he had briefed the Surgeon about the need for sociological research concerning marijuana abuse and had received encouragement in developing a study.

† See Today's Education, *NEA Journal*, (March) 1969, for a special supplement entitled "Students and Drug Abuse."

tary setting, drug abuse is viewed as inimical to effective training, discipline, and organization—all requisite to the maintenance of an optimal system of defense. A 1968 Department of Defense publication (DOD Gen-33, 1968) refers to the problems incurred within the military setting:

> Drug abuse has a particularly important consequence for the Armed Forces. Unlike civilians, those in military service have a special dependency on each other. The lives of all those on a Navy ship may depend on the alertness of one man assigned to close certain watertight doors. Each member of a Marine Corps fire team is dependent on his buddies for survival in a combat situation. There are no "passengers" in fighter aircraft or bombers, or in the Army's tanks. No commander can trust the fate of his unit, ship, or plane to a man who may be under the influence of drugs.
>
> The drug abuser in military service leaves himself wide open as a security risk—for example, he can be blackmailed by threat of exposure. He also can be led to sell or give away classified information to support a drug habit. Also, while under the influence of narcotics he may overlook or ignore proper security measures.

The present study was designed to provide demographic data on experimentation with and heavy use of marijuana in Vietnam. Its inception and development arose from the necessity of acquiring reliable information about the prevalence of the phenomenon in order to assess its impact and importance.

METHOD

An anonymous, four-page, thirty-seven question, multiple-choice questionnaire was administered to a sample of 628 Army enlisted men in the ranks of E-2 through E-6 who were being processed through a replacement center* for return to the United States. This instrument was a modified version of the questionnaire used in the stockade study (Roffman, unpublished). Twenty-three questionnaires were discarded because they were only partially completed, and another 21 were discarded because the respondents indicated that they had not been completely truthful in their answers.† The questionnaires from the remain-

* The 90th Replacement Battalion, an organization which administratively processes Army personnel arriving and departing Vietnam, serves primarily those units located in the two southern corps (III and IV Corps). The Battalion is located in Long Binh. The study drew its sample from one company of the Battalion, the company which processed enlisted men in the ranks of E-1 through E-6 for departure to the United States.

† See the final paragraph and question number thirty-seven in the questionnaire (Appendix II).

ing sample of 584 respondents were analyzed and their results form the basis of this report.*

The researchers visited the replacement center on 41 separate days between 2 August and 1 November 1967. The questionnaires were administered to small groups of respondents ranging in size from 8 to 15. The 584 respondents represent 3.8% of the population (15,284) being processed through the center on the 41 study days.†

The respondents were chosen indiscriminately by a non-commissioned officer (NCO) who regularly conducted a noon-time formation of all personnel scheduled for departure from Vietnam. The NCO was made aware of the purpose of the study and was asked to randomly assign the subjects. The two researchers, alternately, attended each formation and noted that the NCO chose individuals merely by the order they appeared in ranks. Order in ranks appeared to be indiscriminate.

Efforts were made to assure the respondents of the anonymity and confidentiality of their participation.‡ Prior to administration of the questionnaires, the researcher identified himself as belonging to his respective profession (psychology or social work), as aware of the controversy concerning marijuana smoking, as desirous of obtaining accurate information, and guaranteeing absolute anonymity of the answers. The respondents were asked to sit apart from one another, to avoid writing their names on the questionnaire, and to place the completed questionnaires face down on a separate table at the front of the

* Questions number six and fourteen have not been analyzed. Question number six, asking for amount of marijuana smoked each week either in cigarettes or pipes, was found to have been misleading and vague to the respondents. Question number fourteen, calling for job titles of the respondents, led to wide variances in interpretation and response. Questions number twenty-three and twenty-four, designed to seek some indication concerning the possible mixture of opiates with the marijuana were not appropriately worded to elicit the desired information. Furthermore, those questions were objected to by some of the respondents, inasmuch as they inferred that all respondents had smoked marijuana in Vietnam. As objections were raised, the researchers concurred that these two questions were, indeed, phrased inappropriately and non-marijuana users were advised to indicate that the questions were non-applicable (N/A).

† The available statistics indicated that 16,088 enlisted men in the ranks of E-2 through E-9 were being processed on the forty-one study days. Based on the Replacement Battalion Operation Officer's estimate that approximately 5% of the enlisted men were in ranks above E-6, the figure of 15,284 was derived by subtracting 5% from the number of enlisted men in all ranks.

‡ Several respondents indicated orally that the medical affiliation of the researchers enabled them to answer truthfully. See Appendix I for a representation of the remarks which preceded the administration of the instrument.

room. They were reminded that they had not been preselected, nor had their names been recorded. The authors identified themselves as being assigned to a nearby evacuation hospital, thus having no connection with or responsibility to the replacement center.* The importance of gathering information for scientific purposes was highlighted and the respondents were thanked in advance for their important contribution to this effort. They were asked to be completely truthful. However, the respondents were also asked to check "no" to question 37 if they hesitated to answer truthfully.

Demographic data concerning the sample is presented in Table 1. Several items on the questionnaire are not represented in the table. The respondents were asked to identify their branch of service (question 12): all were in the Army. None of the respondents answered affirmatively to the question concerning arrest or conviction for a marijuana offense (question 33). The reader will note that the number of soldiers in specially trained categories (question 15) appears to be low. It is quite possible that certain specially trained soldiers were administratively processed through units other than the replacement center used in this research. Such individuals would thus have been unavailable for selection. Finally, questions 13 and 16 were included to assess possible variance between combatants and those whose primary functions were supportive. Due to the exigencies of the war, it is difficult to accurately ascertain primary function from unit designation, job titles, etc. The respondents were thus asked to classify themselves.

The modal subject was 22 years of age, Caucasian, Protestant, a high school graduate, and single. He was reared in either a small city or in the country. In terms of military identifying characteristics, the typical subject had the rank of E-4 or E-5, was drafted, and had served, at the time of the survey, between one and two years in the military. He was not trained in Army elite specializations (i.e., Rangers, Airborne, or Special Forces), and although his job was supportive in nature, he was likely to have actually been exposed to combat. The modal respondent further had completed a 12-month tour in Vietnam when questioned, had not volunteered for duty in that country, yet indicated satisfaction with the duties of his position. He had not sought professional help for emotional problems, indicated occasional to moderate alcohol consump-

* The medical identification was enhanced by the researcher pointing to the caduceus on his uniform collar and by the questionnaire heading of "935th Medical Detachment (KO), 93d Evacuation Hospital."

TABLE 1
Demographic Information
(N = 584)

Age	
Range	17–49
Mean	23.3
Median	22
Race[a]	
Caucasian	508 (87.0%)
Negro	63 (10.8%)
Other	8 (1.4%)
Religion[a]	
Protestant	371 (63.5%)
Catholic	173 (29.6%)
Jewish	6 (1.0%)
Other/none	32 (5.5%)
Education	
Range	7–19 years
Mean	11.8
Median	12
Marital status	
Single	391 (77.0%)
Married	181 (31.0%)
Divorced	12 (2.1%)
Geographical environment during youth[a]	
Big City	172 (29.5%)
Small City	202 (34.6%)
Country	202 (34.6%)
Combination	6 (1.0%)
Rank[a]	
E-1	0 (0.0%)
E-2	5 (0.9%)
E-3	49 (8.4%)
E-4	241 (41.3%)
E-5	212 (36.3%)
E-6	75 (12.8%)
Median	E-4
Component[a]	
US	307 (52.6%)
RA	276 (47.3%)
Time in service	
Less than one year	10 (1.7%)
Between one and two years	367 (62.8%)
Between two and three years	62 (10.6%)
Over three years	144 (24.7%)

TABLE 1 (*Continued*)

Specialized training	
Ranger	7 (1.2%)
Airborne	38 (6.5%)
Special forces	2 (0.3%)
Functional identification[a]	
Combat	245 (42.0%)
Support	337 (57.7%)
Combat exposure	
Yes	314 (53.8%)
No	270 (46.2%)
Time in Vietnam	
Range	1–32 months
Mean	12.5
Median	12
Volunteered for Vietnam duty	
Yes	156 (26.7%)
No	428 (73.3%)
Satisfaction with duties[a]	
Yes	437 (74.8%)
No	147 (25.2%)
Use of alcohol in Vietnam[a]	
Never	31 (5.3%)
Once in a while	231 (39.6%)
Fairly often	222 (38.0%)
A great deal	98 (16.8%)
Ever sought help for emotional problems	
Yes	57 (9.8%)
No	527 (90.2%)
Articles 15	
Yes, at least one	163 (27.9%)
Range	0–12
Median	0
Courts-martial[b]	
Yes, Summary CM	25 (4.3%)
Range	0–2
Median	0
Yes, Special CM	24 (4.1%)
Range	0–3
Median	0
Yes, General CM	1 (0.2%)
Range	0–1
Median	0

[a] The totals in this category do not add to 584 due to isolated omissions of an item.
[b] Courts-martial were not mutually-exclusive categories, i.e. some of the respondents may have had more than one type of court-martial.

tion, and was not the subject of disciplinary action during his Army service.

RESULTS

Incidence of Marijuana Use

Of the 584 questionnaires analyzed, 185 (31.7%) reported the use of marijuana at some time during their lives. These results are summarized in Table 2. One hundred and sixty-nine or 28.9% of the respondents reported its use while they were serving in Vietnam.

TABLE 2
Incidence of Marijuana Use

Incidence	No Use	Use[a]	Total
Number	399	185	584
Per cent	68.3	31.7	100

[a] Indicates those respondents who have smoked marijuana one or more times *at any time* during their lives.

Unless specifically designated otherwise, the 185 individuals who admitted to marijuana use at any time are referred to as "users" or "smokers" and those 399 who denied its use are referred to as "non-users." A later distinction is made between "casual" and "heavy" smokers on the basis of marijuana use of 20 times or less and 21 times or more.

TABLE 3
Time of Initial Marijuana Use

Period of First Use	Per Cent of Total (N = 584)	Per Cent of Users (N = 185)
Before service (N = 52)	8.9	28.1
After service but before RVN (N = 20)	3.4	10.8
After RVN (N = 113)	19.4	61.1

The time of *initial* use of marijuana is reported in Table 3. Fifty-two respondents began use before coming into the service; 20 initiated marijuana use after entering on active duty but before arriving in Vietnam; 113 (61.1% of the users and 19.4% of the total sample)

began to use marijuana in Vietnam. Of the 72 individuals who initiated the use of marijuana *prior* to arrival in Vietnam, 56 continued its use while 16 smokers who had previously used marijuana did not do so in Vietnam.

Frequency of Marijuana Use

One item questioned the frequency of marijuana use. The respondents were asked to indicate the number of times they had smoked marijuana during each of three time periods: before entering on active duty; after entering the service, but before coming to Vietnam; and since coming to Vietnam. The reader is reminded that use during one of these periods does *not* preclude use during other periods.

The design of this item on the questionnaire was somewhat ambiguous. The phrase "number of times" did not delineate multiple use at a single session. It is not possible to ascertain whether two cigarettes smoked in a single day were recorded as one or two times. Nevertheless, frequency as reported, was analyzed within each use period and is presented in Table 4.

TABLE 4
Frequency of Marijuana Use

Period of Use	Reported Number of Times Used				Total Any Use
	1–5	6–10	11–20	21+	
Before service (N = 57)[a]	45.6%	14.0%	12.3%	28.1%	100%
After service but before RVN (N = 52)[b]	46.2%	17.3%	11.5%	25.0%	100%
After RVN (N = 169)[c]	49.1%	14.8%	10.7%	25.4%	100%

[a] Five respondents who did not respond to the question asking for first use of marijuana nevertheless responded to this frequency question.

[b] Includes 20 respondents who first used marijuana during this period, as well as 32 who continued its use from before their entrance on active duty.

[c] Sixteen individuals who reported marijuana use but did not smoke marijuana in Vietnam were deleted from this group.

Frequency of Marijuana Use before Entering on Active Duty. Fifty-two or 28.1% of the users stated that they had smoked marijuana before entering on active duty. Five additional respondents, however, completed the question asking for "number of times" marijuana was smoked before service.

Frequency of marijuana use is polarized within all groups. From Table 4, one can see that the greatest percentage of users merely sampled the drug and smoked it five times or less, while the next largest group smoked marijuana more than twenty times. Using the arbitrary cut-off of more than twenty and twenty or fewer times to define the two groups, i.e., "casual" use and "heavy" use, 41 (71.9%) of 57 users during this period who responded to the question were casual users, while only 16 (28.1%) were heavy users. A similar polarization also occurs in the next two categories of user respondents.

Frequency of Marijuana Use after Entrance on Active Duty but before Arrival in Vietnam. Fifty-two or 28.1% of the 185 users reported use of marijuana during this period, although only 20 reportedly initiated its use during this time. As noted in Table 4, three-quarters (75%) of the users were casual while 25% were heavy. Twenty respondents who had smoked before service did not admit to marijuana use during this period.

Frequency of Marijuana Use after Arrival in Vietnam. From Table 4, one can see that 169 or 28.9% of the respondents admitted to marijuana use while serving in Vietnam. Sixteen individuals who had previously used the drug did not smoke marijuana during this time period. Once again, of the 169 users, approximately one-quarter (25.4%; N = 44) were heavy users, while almost three-quarters (74.6%; N = 125) used the drug casually. As in the other two time periods described above, most marijuana users appeared interested only in experimentation, not continued use.

Using the previously established criterion, 7.4% (N = 44) of the 584 respondents were heavy users in Vietnam, whereas 21.6% (N = 125) of the sample were casual users in Vietnam. If one were to use the criterion of 11 or more times to denote heavy use, the percentage of such heavy use in Vietnam would only be raised to 10.4% of the total sample.*

Length of Time Served In Vietnam Prior to Marijuana Use

The respondents were asked, "How long after you arrived in Vietnam did you *first* smoke marijuana?" Forty-two per cent (N = 71) of Vietnam smokers first used marijuana between the first and third months

* The authors arbitrarily selected the cut-off between "casual" and "heavy" use (i.e., 20 times) on the basis of their clinical experience in mental health. It was believed that experimentation could have been more readily confused with "chronic" use had a lower cut-off point been chosen.

of their tours; 30.8% (N = 52) first used it between the fourth and sixth months; 17.8% (N = 30) between the seventh and ninth months; and 8.9% (N = 15) waited until the tenth to twelfth months. Thus 72.8% (N = 123) of those who smoked marijuana in Vietnam did so within the first six months of their tours.

Initial Acquisition of Marijuana

In response to the question, "How did you get your first marijuana cigarette or pipeful?" 79.5% (N = 147) stated that they had been given it by a friend, while only 16.2% (N = 30) had bought it. Such information supports the contention that marijuana use is a peer-related phenomenon.

Comparisons of Users and Nonusers on Other Selected Variables

Selected demographic characteristics of users and nonusers are summarized in Table 5. Chi square analyses and t-tests were performed where appropriate to ascertain the presence of significant demographic differences between the two groups. The extents of these differences are enumerated below.

The mean age for the user group was 22.0 years compared to a significantly older mean age of 24.0 years for the nonusers. Age ranges, however, were similar for both subgroups as were education and time spent in Vietnam. Racial differences between the groups did not achieve significance nor did military component, specialized training, or functional identification. Similarly, there were no group differences in the number of volunteers for Vietnam duty.

The percentage of users who described themselves as being raised in a big city was 40.5 (N = 75) compared to only 24.3% (N =297) for the nonusers. Twenty per cent (N =37) of the users indicated a country background, but a significantly greater 41.4% (N = 165) of the nonusers so indicated. Approaching this demographic characteristic from another viewpoint, 43.6% of the total sample who came from a big city were users, whereas only 18.3% of those who described their background as rural were users. The greater use of marijuana therefore does seem related to urban background.

Similarly, there was a correspondence between an individual's rank and his admitting to marijuana smoking. Users were generally lower in rank with a median of E-4 compared to a median of E-5 for nonusers. In addition, 39% (N = 115) of E-2, E-3, and E-4's were users compared to only 24% (N = 69) of the E-5 and E-6's.

TABLE 5
Selected Demographic Characteristics

	Users (N = 185)	*Number*	*Nonusers* (N = 399)	*Number*
Age				
Range	17–38		19–49	
Mean[a]	22.0		24.0	
Median	21		22	
Race				
Caucasian	83.2%	154	88.7%	354
Negro	14.1%	26	9.3%	37
Other	2.2%	4	1.0%	4
Religion[c]				
Protestant	60.5%	112	64.9%	259
Catholic	28.1%	52	30.3%	121
Jewish	1.6%	3	0.8%	3
Other or none	9.7%	18	4.0%	16
Education				
Range	7–19		8–17	
Mean	11.9		11.8	
Median	12		12	
Marital status[c]				
Single	75.1%	139	63.2%	252
Married	22.2%	41	35.1%	140
Divorced	2.7%	5	1.8%	7
Geographical environment during youth[d]				
Big city	40.5%	75	24.3%	97
Small city	37.3%	69	33.3%	133
Country	20.0%	37	41.4%	165
Combination	1.6%	3	0.8%	3
Rank[d]				
E-2	1.6%	3	0.5%	2
E-3	15.7%	29	5.0%	20
E-4	44.9%	83	39.6%	158
E-5	31.4%	58	38.6%	154
E-6	5.9%	11	16.0%	64
Component				
US	57.3%	106	50.4%	201
RA	42.7%	79	49.4%	197
Time in service[d]				
Less than one year	2.7%	5	1.3%	5
Between one and two years	67.0%	124	60.9%	243
Between two and three years	18.4%	34	7.0%	28
Over three years	11.9%	22	30.6%	122
Specialized training				
Ranger	1.6%	3	1.0%	4
Airborne	8.6%	16	5.5%	22
Special forces	0.5%	1	0.3%	1

TABLE 5 (*Continued*)

	Users (N = 185)	*Number*	*Nonusers* (N = 399)	*Number*
Functional identification				
Combat	45.9%	85	40.1%	160
Support	54.1%	100	59.4%	237
Combat exposure[a]				
Yes	60.0%	111	50.9%	203
No	40.0%	74	48.6%	194
Time in Vietnam				
Range (months)	1–20		3–32	
Mean (months)	11.8		12.1	
Median (months)	12		12	
Volunteered for Vietnam duty				
Yes	29.7%	55	25.3%	101
No	68.6%	127	73.9%	295
Satisfaction with duties				
Yes	72.4%	134	75.9%	303
No	25.4%	47	23.8%	95
Use of alcohol in Vietnam[c]				
Never	3.2%	6	6.3%	25
Once in a while	30.8%	57	43.6%	174
Fairly often	43.2%	80	35.6%	142
A great deal	22.2%	41	14.3%	57
Ever sought help for emotional problems				
Yes	13.0%	24	8.3%	33
No	86.5%	160	91.7%	366
Articles 15[d]				
Yes, at least one	38.9%	72	22.8%	91
Range	0–12		0–10	
Median	0		0	
Courts-Martial				
Yes, Summary CM	4.3%	8	4.3%	17
Yes, Special CM	3.2%	6	4.5%	18
Yes, General CM	0.5%	1	0.0%	0
Peer use of marijuana				
Close friends[d]	83.2%	154	41.6%	166
Acquaintances[d]	93.0%	172	65.9%	263
Use of other drugs[d]				
Yes	11.4%	21	1.5%	6
No or no answer	88.6%	164	98.5%	393
Intentions regarding future marijuana use[d]				
Will use	21.1%	39	0.8%	3
Will not use	42.2%	78	81.0%	323
Don't know	36.8%	68	17.8%	71

[a] $p = 0.05$.
[b] $p = 0.02$.
[c] $p = 0.01$.
[d] $p = 0.001$.

Differences in length of service were evident between smokers and nonsmokers, with users generally showing less time in the military. This relationship becomes very clear when we realize that although 31.7% (N = 185) of the total sample used marijuana, 33.8% (N = 124) of people with between one and two years of service smoked, and 54.8% (N = 34) of those with between two and three years of service were smokers. Only 15.3% (N = 22) of those with more than three years in the military were users. The reader should bear in mind that draftees generally only serve two years, while young enlistees serve three years. Those who have served more than three years have re-enlisted at least once and presumably have a greater investment in a military career.*

Users have significantly more Articles 15 (punishment for a minor disciplinary infraction). Of the users, 38.9% (N = 72) had at least one Article 15, whereas only 22.8% (N = 91) of the nonusers received this punishment. This difference is highly significant. Of those soldiers with at least one Article 15, 44.3% (N = 72) were smokers, while only 29.1% (N = 113) of those without an Article 15 were smokers. No differences were apparent in the extent of courts-martial between users and nonusers.

Two questions were included to ascertain knowledge of marijuana smoking among peers. The results presented in Table 5 were in response to the questions: (a) "Do any of your *close* friends smoke marijuana?" and (b) "Do any people you know smoke marijuana?" As might be expected, more users than nonusers had both friends and acquaintances who smoked marijuana. Interestingly, there were many nonusers who also knew of smokers. Of the total sample, 54.8% (N = 320) had close friends who smoked, and 74.5% (N = 435) had acquaintances who were smokers.

There is little difference between the proportion of marijuana smokers among the religious subgroups, but 56.2% (N = 18) of those individuals who indicated "other" for religious preference were smokers. The primary significance is between those subjects who chose one of the groups, and those who answered "other" or "none." Three of six Jewish soldiers in the sample were users.

It is of interest to note that 35.6% (N = 139) of the single individuals in the sample smoked marijuana compared to only 22.7% (N = 41) of the married individuals. Further, five (41.7%) of the 12

* It may be that greater career investment is positively correlated with either less marijuana experimentation or greater reluctance to endanger career goals by admitting its use.

divorced soldiers were users. Caution should be exercised in estimating marijuana use among divorced soldiers on the basis of the above data as the elimination of higher ranking enlisted men and officers, in addition to the rather young age of the sample, probably precluded inclusion of an adequate sample of divorced people.

A greater proportion of users described exposure to actual combat. As will be reported below, marijuana smoking is likely to be more prevalent in "the field" among soldiers involved directly with combat than among personnel who primarily serve in support areas (Postel, 1968).

Marijuana smokers indicated a greater use of alcohol and other drugs. Of the users, 11.4% (N = 21) described other drug use compared to only 1.5% (N = 6) of the nonsmokers. One must, however, be cautious in the interpretation of the incidence of other drug use, as the ambiguity of the question caused some respondents to answer affirmatively even though a physician had prescribed the drug for a specific ailment. Most commonly mentioned were the amphetamines, which were described as bennies, benzedrine, and pep pills. LSD and heroin were indicated a total of 6 and 4 times respectively.

The extent of alcohol use in Vietnam was determined through analysis of the responses to the question, "While in Vietnam, how often do you drink alcohol?" The possible responses were: (a) never, (b) once in a while, (c) fairly often, and (d) a great deal. No specific amounts were included as the authors were more interested in the respondent's perception of his alcoholic intake than in the actual number of drinks. Not only was alcohol use more prevalent among users, but 41.8% (N = 41) of the individuals who described "a great deal" of alcohol intake were marijuana smokers compared to only 19.4% (N = 6) of those who indicated no alcohol use.

Only 0.8% (N = 3) of nonsmokers stated that they would use marijuana in the future, compared to 21.1% (N = 39) of the users. Of interest is the fact that 42.2% (N = 78) of the smokers reported that they *would not* use marijuana in the future. As is reported below, the majority of these individuals indicated only "casual" use of the drug.

Comparisons of Users Initiating Use Prior to Vietnam with Those Initiating Use in Vietnam

Seventy-two (38.9%) of all users began smoking marijuana prior to their arrival in Vietnam (hereafter referred to as "pre-Vietnam

TABLE 6
Initial Use Before and After Arrival in Vietnam

	Before N = 72	Number	After N = 113	Number
Age				
Range	17–38		19–31	
Mean	22.3		21.8	
Median	22		21	
Race[d]				
Caucasian	70.8%	51	91.1%	103
Negro	25.0%	18	7.0%	8
Other	2.8%	2	1.7%	2
Religion[a]				
Protestant	50.0%	36	67.3%	76
Catholic	36.1%	26	23.0%	26
Jewish	4.2%	3	0.0%	0
Other or none	9.7%	7	9.7%	11
Education				
Range	8–19		7–16	
Mean	11.9		11.7	
Median	12		12	
Marital status				
Single	77.8%	56	73.5%	83
Married	19.4%	14	23.9%	27
Divorced	2.8%	2	2.7%	3
Geographical environment during youth[c]				
Big city	51.4%	37	33.6%	38
Small city	37.5%	27	37.2%	42
Country	8.3%	6	27.4%	31
Combination	2.8%	2	0.9%	1
Rank[b]				
E-2	1.4%	1	1.8%	2
E-3	23.6%	17	10.6%	12
E-4	40.3%	29	47.8%	54
E-5	23.6%	17	36.3%	41
E-6	9.7%	7	3.5%	4
Component				
US	56.9%	41	57.5%	65
RA	43.1%	31	42.5%	48
Time in service				
Less than one year	4.2%	3	1.8%	2
Between one and two years	70.8%	51	64.6%	73
Between two and three years	12.5%	9	22.1%	25
Over three years	12.5%	9	11.5%	13

TABLE 6 (*Continued*)

	Before N = 72	Number	After N = 113	Number
Specialized training				
Ranger	1.4%	1	1.8%	2
Airborne	8.3%	6	8.8%	10
Special forces	1.4%	1	0.0%	0
Functional identification				
Combat	50.0%	36	43.4%	49
Support	50.0%	36	56.6%	64
Combat exposure				
Yes	58.3%	42	61.1%	69
No	41.7%	30	38.9%	44
Time in Vietnam				
Range (months)	1–20		5–19	
Mean	11.8		11.9	
Median	12		12	
Volunteered for Vietnam duty				
Yes	25.0%	18	32.7%	37
No	70.8%	51	67.3%	76
Satisfaction with duties				
Yes	69.4%	50	74.3%	84
No	27.8%	20	23.9%	27
Use of alcohol in Vietnam				
Never	6.9%	5	0.9%	1
Once in a while	30.6%	22	31.0%	35
Fairly often	38.9%	28	46.0%	52
A great deal	22.2%	16	22.1%	25
Ever sought help for emotional problems				
Yes	15.3%	11	11.5%	13
No	84.7%	61	87.6%	99
Articles 15				
Yes, at least one	47.2%	34	35.4%	40
Range	0–12		0–6	
Median	0		0	
Courts-Martial				
Yes, Summary CM	8.3%	6	1.8%	2
Yes, Special CM	2.8%	2	3.5%	4
Yes, General CM	1.4%	1	0.0%	0
Means of acquisition				
Obtained from friend	77.8%	56	80.5%	91
Purchased	16.7%	12	15.9%	18
Peer use of marijuana				
Close friends	87.5%	63	80.5%	91
Acquaintances	97.2%	70	90.3%	102

TABLE 6 (*Continued*)

	Before N = 72	Number	After N = 113	Number
Time of initial use				
Prior to EAD[e]	72.2%	52	N/A	
After EAD/Prior to RVN	27.8%	20	N/A	
After arrival in Vietnam	N/A		100%	113
Frequency of use				
Prior to EAD				
Twenty times or less	71.4%	40	N/A	
More than twenty times	28.6%	16	N/A	
After EAD/Prior to RVN				
Twenty times or less	74.5%	38	N/A	
More than twenty times	25.5%	13	N/A	
After arrival in Vietnam[d]				
Twenty times or less	57.1%	32	83.2%	94
More than twenty times	42.9%	24	16.8%	19
Months in Vietnam prior to initial RVN use[d]				
One to three months	56.9%	41	26.5%	30
Four to six months	13.9%	10	37.2%	42
Seven to nine months	6.9%	5	22.1%	25
Ten to twelve months	0.0%	0	13.3%	15
Use of other drugs[d]				
Yes	19.4%	14	6.2%	7
No	34.7%	25	47.8%	54
Intentions regarding future marijuana use[d]				
Will use	37.5%	27	10.6%	12
Will not use	23.6%	17	54.0%	61
Don't know	38.9%	28	35.4%	40

[a] $p = 0.05$.
[b] $p = 0.02$.
[c] $p = 0.01$.
[d] $p = 0.001$.
[e] EAD (Entrance on Active Duty).

users"). There were 113 users (61.1%, hereafter referred to as "post-Vietnam users") who started smoking marijuana while in Vietnam.

As was true in the comparison between users and nonusers, education, time spent in Vietnam, component, specialized training, job satisfaction, functional identification, seeking professional help for emotional problems, and whether or not one volunteered for Vietnam duty did not differ significantly between the subsamples. The following variables had significant differences in the user/nonuser differentiation, but were not significantly different in the analysis of time of initial use: age,

marital status, time in service, exposure to combat, alcohol use in Vietnam, history of Articles 15, and peer marijuana use.

The factors of religion, geographical environment during youth, rank, use of other drugs, and intention with regard to future use of marijuana, as before, did reach significance and will be further articulated below.

In addition, three other factors were sufficiently different between the groups to reach the 0.001 level of significance. They were race, time spent in Vietnam before smoking marijuana, and frequency of use in Vietnam. A significantly greater proportion of the users who initiated drug use *before* Vietnam were heavy smokers *in* Vietnam when compared to users who initiated smoking *in* Vietnam.

Negroes make up a greater proportion of the pre-Vietnam users than of the post-Vietnam users. Of the 26 Negro users, 18 (69.2%) had begun smoking marijuana prior to their arrival in Vietnam, while only 33.1% (N = 51) of the Caucasian smokers had used the drug before their arrival into the combat zone. A greater tendency existed for the Catholics to have first used marijuana prior to arrival in Vietnam. Protestant users were more likely to initiate use in Vietnam.

Additionally, 56.9% (N = 41) of the pre-Vietnam smokers used marijuana within the first three months of their combat tours compared to only 26.5% (N = 30) of the post-Vietnam users. It seems likely that those individuals who had smoked before Vietnam probably *sought out* the drug after they had arrived in that country and smoked more heavily. It is also possible that the soldier who was experienced in marijuana smoking and its effects would be less reluctant to risk using it in Vietnam.

Of the pre-Vietnam users, 51.4% (N = 37) described a big city up-bringing compared to only 33.6% (N = 38) of the post-Vietnam users. Further, only 8.3% (N = 6) of those with a country background used marijuana before arriving in Vietnam.

As can be seen in Table 6, the pre-Vietnam user is generally of lower rank, although 9.7% (N = 7) of that group were E-6's. Also, a significantly greater proportion of pre-Vietnam users used other drugs and related the intention to continue smoking marijuana in the future.

Comparison of "Heavy" and "Casual" Users in Vietnam

Use of marijuana 20 or fewer times was described as casual. Of the 141 casual users, 16 did not smoke marijuana in Vietnam, but had smoked casually before coming to Vietnam. An additional 4 casual

TABLE 7
"Heavy" and "Casual" Use in Vietnam

	"Heavy" Users (N = 44)	Number	"Casual" Users (N = 141)	Number
Age				
Range	19–24		17–38	
Mean[c]	21.2		22.2	
Median	21		22	
Race				
Caucasian	75.0%	33	85.8%	121
Negro	22.7%	10	11.3%	16
Other	2.3%	1	2.1%	3
Religion				
Protestant	54.5%	24	62.4%	88
Catholic	34.1%	15	26.2%	37
Jewish	0.0%	0	2.1%	3
Other or none	11.4%	5	9.2%	13
Education				
Range	9–16		7–19	
Mean	12.0		11.9	
Median	12		12	
Marital status				
Single	75.0%	33	75.2%	106
Married	22.7%	10	22.0%	31
Divorced	2.3%	1	2.8%	4
Geographical environment during youth				
Big city	50.0%	22	37.6%	53
Small city	34.1%	15	38.3%	54
Country	11.4%	5	22.7%	32
Combination	2.3%	1	1.4%	2
Rank[d]				
E-2	0.0%	0	2.1%	3
E-3	31.8%	14	10.6%	15
E-4	52.3%	23	42.6%	60
E-5	11.4%	5	37.6%	53
E-6	4.5%	2	6.4%	9
Component				
US	63.6%	28	55.3%	78
RA	36.4%	16	44.7%	63
Time in service				
Less than one year	0.0%	0	3.5%	5
Between one and two years	75.0%	33	64.5%	91
Between two and three years	22.7%	10	17.0%	24
Over three years	2.3%	1	14.9%	21

TABLE 7 (*Continued*)

	"Heavy" Users (N = 44)	Number	"Casual" Users (N = 141)	Number
Specialized training				
Ranger	2.3%	1	1.4%	2
Airborne	9.1%	4	8.5%	12
Special Forces	0.0%	0	0.7%	1
Functional identification				
Combat	52.3%	23	44.0%	62
Support	47.7%	21	56.0%	79
Combat exposure				
Yes	68.2%	30	57.4%	81
No	31.8%	14	42.6%	60
Time in Vietnam				
Range (months)	8–19		1–20	
Mean	12.2		11.7	
Median	12		12	
Volunteered for Vietnam duty				
Yes	27.3%	12	30.5%	43
No	70.5%	31	68.1%	96
Satisfaction with duties				
Yes	63.6%	28	75.2%	106
No	36.4%	16	22.0%	31
Use of alcohol in Vietnam				
Never	6.8%	3	2.1%	3
Once in a while	31.8%	14	30.5%	43
Fairly often	36.4%	16	45.4%	64
A great deal	25.0%	11	21.3%	30
Ever sought help for emotional problems				
Yes	13.6%	6	12.8%	18
No	84.1%	37	87.2%	123
Articles 15[a]				
Yes, at least one	54.5%	24	35.5%	50
Range	0–12		0–7	
Median	1		0	
Courts-martial				
Yes, Summary CM	6.8%	3	3.5%	5
Yes, Special CM	0.0%	0	4.3%	6
Yes, General CM	2.3%	1	0.0%	0
Means of acquisition				
Obtained from friend	79.5%	35	79.4%	112
Purchased	20.5%	9	14.9%	21
Peer use of marijuana				
Close friends[d]	100%	44	78.0%	110
Acquaintances	97.7%	43	91.5%	129

TABLE 7 (*Continued*)

	"Casual" Users (N = 44)	Number	"Heavy" Users (N = 141)	Number
Time of initial use[c]				
Prior to EAD	38.6%	17	24.8%	35
After EAD/Prior to RVN	18.2%	8	8.5%	12
After Arrival In RVN	43.2%	19	66.7%	94
Frequency of use				
Prior to EAD				
Twenty times or less	42.9%	9	88.9%	32
More than twenty times	57.1%	12	11.1%	4
After EAD/Prior to RVN				
Twenty times or less	48.0%	12	100%	27
More than twenty times	52.0%	13	0%	0
After Arrival In RVN				
Twenty times or less	0.0%	0	100%	125
More than twenty times	100%	44	0%	0
Months in Vietnam prior to initial RNV use[d]				
One to three months	72.7%	32	27.7%	39
Four to six months	9.1%	4	34.0%	48
Seven to nine months	15.9%	7	16.3%	23
Ten to twelve months	2.3%	1	9.9%	14
Use of other drugs[c]				
Yes	25.0%	11	7.1%	10
No	40.9%	18	43.3%	61
Intentions regarding future marijuana use[d]				
Will use	56.8%	25	9.9%	14
Will not use	9.1%	4	52.5%	74
Don't know	34.1%	15	37.6%	53

[a] $p = 0.05$.
[b] $p = 0.02$.
[c] $p = 0.01$.
[d] $p = 0.001$.

smokers in Vietnam were heavy smokers before coming to the combat zone, but smoked less than 20 times in Vietnam.

Of the 44 (7.5% of the total sample) heavy smokers, 17 had been heavy before Vietnam and continued to be so, while 8 had been casual before Vietnam but became heavy. Nineteen respondents (3.3% of the total sample) who had never used marijuana prior to coming to Vietnam, smoked more than 20 times while in Vietnam.

As can be seen in Table 7, there is a significantly greater proportion of E-3's and E-4's among the heavy users. Of the casual smokers,

37.6% (N = 53) are E-5's compared to a much lower 11.4% (N = 5) of the heavy users who are E-5. Heavy users are younger as a group and closer in age than casual users.

It appears that heavy marijuana smokers act out in such a manner as to obtain significantly more Articles 15. In fact, 54.5% (N = 24) of the heavy smokers had Articles 15 compared to 35.5% (N = 50) of the casual smokers and 22.8% (N = 91) of the nonsmokers.

Of the heavy smokers, 56.8% (N = 25) had smoked before Vietnam, while only 33.3% (N = 47) of the casual smokers had done so. Further, 42.9% (N = 24) of the pre-Vietnam smokers were heavy in Vietnam compared to only 16.8% (N = 19) of the post-Vietnam smokers.

Additionally, as might have been expected, a great majority of the heavy smokers (72.7%; N = 32) used marijuana within the first three months of their tours. One-quarter (25%; N = 11) of the heavy users also used other drugs compared with only 7.1% (N = 10) of the casual users.

Heavy smokers also described an investment in the future use of the drug as 56.8% (N = 25) said they would smoke in the future. Only 9.9% (N = 14) of the casual smokers said they would do so.

DISCUSSION

Certain reasons for caution in interpretation and generalization from the data must be noted. The representativeness of the current sample is restricted by the researchers' choice of rank distribution, i.e., enlisted men above the rank of E-6 and all officers were excluded from this study Because the respondents were primarily assigned at the time of their rotation to units in the two southern tactical corps areas, the data cannot be considered representative of Army enlisted men throughout Vietnam. It is possible that marijuana availability and use in the northern sectors is quite different. A variation in density of cities, placement of military units, exposure to Vietnamese civilians, and other factors may affect the phenomenon of marijuana use.

The fact that this study was done at one point in time (August through November, 1967) may limit its application to the past or future. This is particularly relevant to a phenomenon such as drug abuse, the incidence of which is highly dependent upon the changing prescriptions of a culture.

An additional note of caution should be taken from the fact that an

unknown percentage of individuals were not available for study. One can only speculate about whether those soldiers killed in Vietnam were any more or less likely to have used marijuana. The same questions may be asked regarding those individuals who were injured or became ill, and were medically evacuated from the country.

Despite the authors' promises of respondent anonymity and emphasis on their mental health functions, the impact of officers asking enlisted men to admit to illegal acts is an unknown factor.

The results approximate the empirical impressions of the authors gained through their clinical experience in psychiatric facilities and their consultation with commanders in Vietnam. Very much in evidence, however, have been the estimations of other observers, some of whom have received press coverage. John Steinbeck IV (1968) wrote in a popular magazine:

> The question comes up, "How many Americans in Vietnam smoke this ancient weed, and why, and when?" The answer, in order, is that most (75 per cent) young soldiers smoke it, for all sorts of reasons, all the time.

Writing of his observations during approximately the same period of time as Mr. Steinbeck, Lee Dembart (1968), a reporter with the Queens College student newspaper, wrote, "The actual figure (of marijuana use), though, is probably something around 20 per cent. . . ."

Imperi (1968) and her colleagues noted that the incidience of marijuana abuse as discovered through their research was much lower than student opinion tended to indicate. Imperi comments:

> Estimates by students tend at least to double the present figures and at times to triple them. The discrepancy may be due to problems of a questionnaire technique or to the need for involved students to overestimate drug use to justify to themselves their own use or, perhaps, to the openness with which drugs are used which creates an impression of "everyone is doing it."

Dr. Dana L. Farnsworth, Director of Harvard University's Health Services, in a letter to the author (RR) stated: "Those students who do use it think that practically everyone does and those who do not seem to think that very few people use it." Farnsworth (1968) comments on the disproportionate visibility of certain forms of behavior:

> Publicity by the mass media almost always spotlights the bizarre, the violent, the psychopathological, or the dramatic. Hence, young people (and their elders) easily get an exaggerated picture of their generation, mainly because the vast number of highly motivated young people who are working effectively are not newsworthy and not so visible.

While engaged in the preparation of this report, the researchers discussed their findings with colleagues and associates who had also served in Vietnam. Many believed that the actual incidence of marijuana use was greater than that revealed by the study. There is good reason to suspect, however, that the estimates of those who served in Vietnam would be influenced by both the taboo nature of the phenomenon, and the high degree of visibility accorded to those who did use the drug and were identified as such. This overexaggeration, if present, might be similar to the phenomenon occurring when two or three airplanes crash within a short period of time. Despite the fact that hundreds of other airplanes are safely completing trips at the same time, many people tend to overexaggerate the percentage of airplane accidents.

An additional factor which may influence the estimates of observers is the fairly significant variation of settings to which American soldiers are exposed in Vietnam. One often compares notes and experiences with other people who have been to Vietnam, not infrequently observing that the individual whose tour was spent in Chu Lai saw a very different Vietnam than the individual whose assignment was in Saigon. It is quite likely that the visibility of marijuana varies greatly from one sector to another, just as it is likely that actual availability and use of the substance may very well vary.

It is of more than passing interest to find 54.8% of the current sample indicating that they had close friends who smoked, and 74.5% that they had acquaintances who were smokers. These figures bear a striking resemblance to those used anecdotally by Steinbeck and others.

Finally, we must comment on the distortion factor created by incorrect press reporting. One of the researchers completed a study of marijuana abuse among men confined in the USARV Stockade. One finding revealed that 63% of those prisoners who had never been convicted of a marijuana offense admitted to having smoked marijuana at least once in their lives. This statistic was reported incorrectly in newspapers across the U. S. as: "A recent survey showed 83% of a group of inmates at a US Army Stockade admitted smoking marijuana." Several months following the publication of the above incorrect statement, the editor of The Washingtonian magazine, in a footnote to Mr. Steinbeck's article (1968), further complicated the distortion by writing: "In fact, preliminary reports on an official Army study show that 83% of soldiers questioned said that they had smoked marijuana." This latter reference completely ignored the stockade as having been the study setting and reinforced the previous error of the wire service reporter. The research-

ers strongly suspect that the publication of these erroneous figures had some influence on the estimations of those who read the material.

Due to the nature of the differing study populations as well as variations in research techniques, it is difficult to compare the results of this study precisely with the finding of other researchers. However, there are certain similarities which should be noted. The studies of university student populations dealt, for the most part, with subjects of approximately the same age range as did the present study. The San Francisco work of Manheimer *et al.,* (1969), presents the opportunity to examine individuals with varying educational levels chosen from the general population. All of the studies reported were performed within approximately the same period of time, i.e., 1967 to early 1968.

The range of incidence of marijuana use from all of the reported studies is 18% (Blum's west coast schools) to 49% (Kleber's 1968 Yale study). As noted in the introduction, estimates made by experts in drug research placed the incidence of marijuana use among college students between 20 and 30% in 1967 through early 1968. The findings of the current study which identify 31.7% of the Army enlisted men as having used marijuana at least once appear to be within the expected range of users for this age group.

With reference to the differentiation between casual use and heavy use, the present study considered more than 20 times to be indicative of heavy use. Other studies have considered use exceeding ten times to be heavy. There has not been consensus on this subject and some researchers define the categories in terms of number of times marijuana is used weekly or monthly, how recently it has been used, or in other ways. Nevertheless, there are similarities in the findings of the present study with those of others. Of the users in the present study, 74.6% were considered casual; however, on the basis of ten times or less, 64% of the users would be casual. Kleber, Imperi, and Eells all used ten or less times as the dividing point. Kleber (1968) found that 66% of the Yale undergraduates users were casual. Imperi (1967) found that 60% of the Wesleyan undergraduate users and 81% of the Yale undergraduate users were casual. Eells found that 62.2% of the Caltech undergraduate users were casual. The current research findings (64% "casual" users) thus again appear to be within the expected range identified.

Using Manheimer's recently completed San Francisco statistics, there is the opportunity to compare findings with regard to specific variables and marijuana use. With reference to race, neither Manheimer (in the male portion of his study) nor the present researchers found significance in terms of incidence of use. The present research did, however, find a

significantly higher proportion of the Negro users initiating marijuana smoking earlier. The San Francisco research did not find significant differences between single and married men within the 18 to 34 age range, whereas the present study revealed a significantly higher proportion of single persons among the users, and of married individuals among the nonusers. Both studies revealed a high incidence of use among separated and divorced men.

Marijuana use and alcohol intake were positively correlated in both studies. Manheimer found a significantly higher proportion of users among those San Franciscan males (a) who in the previous month drank on 11 days or more, (b) who at one sitting usually had five drinks or more, and (c) whose maximum number of drinks per sitting during the previous year was 12 drinks or more. Manheimer found a significantly higher proportion of users among those men who professed no religious affiliation (56%). This is in agreement with the findings of the present study which reveal 56.2% of those individuals who professed no religious affiliation to be users.

Several trends from the data of the present research are worth noting. The soldier who is likely to experiment with marijuana will probably obtain it within the context of a peer subculture in which such experimentation is given approval. He is likely to have been reared in the environment of a city, and at the time he first experiments with the drug he will most likely be unmarried, separated, or divorced. He will tend to be younger and have less rank than his nonuser peers. There is some tendency for him to have dissociated himself from the three major religious groups.

The finding that users tended to have been exposed to combat to a greater extent than nonusers, is supported by Postel's research. He comments:

> The smokers stated they smoked more frequently in the field than elsewhere. Smokers tended more often to have their first marijuana smoking experience either prior to service or in the field. Nonsmokers, as a group, had spent a smaller proportion of their RVN (Republic of Vietnam) tour in the field than had the smokers; and nonsmokers had seen less combat than the smokers. There are at least two likely reasons for smoking to be more frequent in the field: Detection is less likely there; and the tranquilizing effect of the drug may be more appreciated in the more stressful forward areas. The usual habit was to smoke the drug after a battle to calm down. Only one person indicated that he smoked the drug while fighting. (Postel, 1968.)

This research has found positive correlations between use of marijuana and certain forms of acting out, i.e., Articles 15, illicit use of other drugs,

intent to continue marijuana smoking, and use of alcohol more than in moderation. The direct correlation of marijuana use and incidence of nonjudicial punishment (Articles 15) occurred as expected. Risk-taking of one sort appears to relate to other forms of mis-behavior, generally minor in nature.

With reference to the time of initial use of marijuana, there was a tendency for the earlier users to have a greater proportion of Negroes among their numbers. The soldier with less rank and from a big city background is more likely to have used marijuana earlier.

The data reveal 61.1% of the users who hadn't experimented with marijuana prior to arrival in Vietnam initiated its use in Vietnam. Of interest is the general tendency for the post-Vietnam users to be younger than the pre-Vietnam users. Both Eells (Caltech) and the Blums (five west coast universities) found higher percentages of users among the juniors and seniors (generally those 20 or 21 years of age) than among the freshmen, sophomores, or graduate students. With this data appearing consistent with the tendencies revealed in the present study, the factor of simply being in Vietnam may not completely explain the higher phenomenon of use. Indeed, there is some basis to suggest that, regardless of setting, marijuana use has occurred concomitant with a certain age range. In reviewing the several university studies performed in 1967 and 1968, Blum (1969) makes the following observations:

> Within their limitations it is clear that the college surveys through 1967 showed that most users of illicit drugs had begun their experimentation in college, that most such use was learned from peers—and inferentially from upperclassmen—and that successful and active students could be involved in illicit use fully as much as "deviant" or fringe-element students. Graduate students, especially married and career-oriented people, appear to have been less involved in illicit-drug use.
>
> In the 1968 studies—admittedly very limited in scope and method—one senses expansion of illicit use not only very considerably downward in age and "sideways" in the sense of within college-age or class groups but also upward as well into the echelons of unmarried graduate students. . . . All these findings stress the importance of marijuana rather than hallucinogens in terms of the number of students involved; they also imply the immense amount of marijuana which must be physically available in our major cities.

There is reason to suspect that the initiation of use in the military is very much akin to that in the civilian community for those of a similar age range.

The heavy marijuana user is likely to have initiated its use earlier

than the casual user. He is more likely to use other drugs illicitly than is the casual user and is more likely to continue marijuana use in the future. The heavy user may also be distinguished as being slightly younger, having less rank, being more likely to receive at least one Article 15, and using marijuana in Vietnam earlier than his casual user peer. The peer subculture of the heavy user is more heavily weighted in the direction of supporting marijuana use than is that of the casual user.

In conclusion, it appears that the phenomenon of marijuana use, both in prevalence and incidence, is very similar in the population currently studied to those studied in the United States. This correspondence in findings, on many levels of demographic characteristics, tends to suggest that the enlisted man serving in Vietnam is no more likely to use marijuana than is his civilian peer in the United States.

SUMMARY

An anonymous, multiple-choice questionnaire was administered to 628 Army enlisted men (ranks E-2 through E-6) selected indiscriminately at a replacement center where they were processing for return to the United States. Forty-four incomplete or admittedly falsified questionnaires were discarded resulting in a remaining sample of 584 respondents. The majority of the respondents indicated that they had never smoked marijuana. Of the 31.7% (N = 185) who had, 61.1% (N = 113) first smoked marijuana after coming to Vietnam. Approximately three-quarters of the users (N = 141) only experimented with the drug; one-quarter (N = 44) were considered to be heavy marijuana users. Marijuana smoking was considered as experimental or "casual" when it occurred on 20 or fewer occasions. "Heavy" use was manifested by smoking on 21 or more occasions. These findings, when compared with the results of civilian studies performed in the same time period, reveal that marijuana use occurred to no greater extent in the specific military population studied than in many civilian university communities or among the comparable age group in the general population of San Francisco.

The heavy marijuana user was unique in terms of his being younger, of less rank, and being more likely to have close friends who use marijuana than the casual user. He is further differentiated by being more likely to have used marijuana before coming to Vietnam, using it earlier in his tour in Vietnam, being more likely to use other drugs

illicitly, having been the subject of at least one minor disciplinary action, and intending to use marijuana in the future.

The soldier who first used marijuana *before* coming to Vietnam is distinguished by virtue of his being more likely to have been reared in a large city, having more Negroes among his numbers, having less rank, being more likely to use other drugs illicitly, using marijuana earlier in his tour, and intending to use marijuana in the future.

Corroboration of the findings of other studies occurred with reference to incidence of use, frequency of use, race, marital status, religion, and use of alcohol.

APPENDIX I: FACSIMILE OF REMARKS MADE PRIOR TO ADMINISTRATION OF THE QUESTIONNAIRES

Good afternoon. Thank you for coming this afternoon. I promise that what I'll be asking you to do won't take very long, and you might find it to be kind of interesting. I apologize for asking you to do anything besides breathe, eat, and so on. I think that if I were about to get on a plane to go home, I probably wouldn't be particularly thrilled to do much of anything besides exist!

My name is (Lt. Roffman/Capt. Sapol) and I'm a (social worker/psychologist) working up the road at the 93d Evacuation Hospital. A colleague (Capt. Sapol/Lt. Roffman) and I are working on a study and have been visiting here at the 90th Replacement Battalion for several weeks now, talking with groups of men such as yourselves.

As I'm sure you know, the use of marijuana is a pretty touchy issue. It's very controversial and many people have very strong opinions about it. Some feel that marijuana should be legalized; others feel that it should remain illegal and that the penalties for use should be increased. We all know that marijuana is available in Vietnam and that a certain number of people use it. None of us know exactly how many people use it, or how often, and yet this is important to know. The reason that it is important is that before you can decide what to do about something like pot-smoking, you've got to know how widespread its use is.

I'm asking you to help me in this research by filling out a brief questionnaire which I'll give you in a minute. You'll see that there's no place for your name on the questionnaire; please be sure that you don't write your name on it. This study is completely anonymous. There can be no danger to you or to anybody you know from filling out this questionnaire honestly. I know I'm asking you to tell whether or not you've performed an illegal act; but, I promise you that if there were any possibility of anybody getting into trouble by being truthful on this questionnaire, I would not ask you to fill it out. My colleague and I are professional mental health workers; we're not in any way connected with the 90th Replacement Battalion and we're not policemen or CID men. We're medics and we're only interested in the information we're asking you to provide for scientific use.

You'll remember that the NCO who picked you out of ranks at the formation

didn't write down your names and he chose you merely by the fact that you were next in line for a detail. I'm not going to write down names either. Believe me, your privacy is completely protected.

Let me say that if, for some reason, you feel that you can't be truthful, please check "NO" on question number 37. As you will see, that question asks whether or not you've answered the rest of the questions honestly. If you check "NO" on question number 37, that will enable me to destroy your questionnaire and not use it with the others so as not to come up with incorrect figures.

Before we begin, I'd like to ask you to move so that only one man is sitting at each table. When you've finished and have checked over to see that you've answered all of the questions, please bring the questionnaire up and place it face down on this table. Let me say that we're extremely grateful to you for your help with this research.

Are there any questions?

APPENDIX II: QUESTIONNAIRE
935th Medical Detachment (KO)
93d Evacuation Hospital
APO 96491

DATE:_____

Please do not put your name on this paper. Your answers will be kept *completely confidential.* Please answer each question honestly and completely. This survey is for research purposes only. We promise you that your answers will not put you or your friends in any danger whatsoever. We appreciate your help in our research.

ELY SAPOL
CPT, MSC
CLINICAL PSYCHOLOGIST

ROGER A. ROFFMAN
ILT, MSC
SOCIAL WORKER

1. Have you ever used: Marijuana? Yes____ No____
   Other drugs? Yes____ No____
   What other drugs?_____

2. When did you first use marijuana? (Check one)
   I never used marijuana _____
   Before coming into the service _____
   After coming into the service,
   but before coming to Vietnam _____
   Since coming to Vietnam _____

3. About how many times did you smoke marijuana *before coming into the service?* (Check one)
   None____ 1 to 5 times____ 6 to 10 times____
   11 to 20 times____ More than 20 times____

4. About how many times did you smoke marijuana *after you came into the service but before you came to Vietnam?* (Check one)
   None____ 1 to 5 times____ 6 to 10 times____
   11 to 20 times____ More than 20 times____

5. About how many times have you smoked marijuana *since coming to Vietnam?* (Check one)
   None____ 1 to 5 times____ 6 to 10 times____
   11 to 20 times____ More than 20 times____

6. About how many marijuana cigarettes or pipe-fulls were you smoking *each week* in Vietnam?
   Cigarettes_____ Pipe-fulls_____

7. How long after you arrived in Vietnam did you *first* smoke marijuana? (Check one)
   Never smoked marijuana in Vietnam ____
   First month to third month ____
   Fourth month to sixth month ____
   Seventh month to ninth month ____
   Tenth month to twelfth month ____

8. Do any of your *close* friends smoke marijuana? Yes____ No____

9. Do any people you know smoke marijuana? Yes____ No____

10. How did you get your first marijuana cigarette or pipe-full? (Check one)
    Never smoked marijuana ____
    A friend gave it to me ____
    I bought it ____
    Some other way ____ Please describe

11. How old are you? _____

12. Which branch of the service are you in?
    Army____ Air Force____ Navy____ Marines____

13. Are you a combat soldier or a support soldier?
    Combat____ Support____

14. What is your job?_____

15. Are You: Airborne? Yes____ No____
    Ranger? Yes____ No____
    Special Forces? Yes____ No____

16. Have you ever been in actual combat? Yes____ No____

17. Did you volunteer for duty in Vietnam? Yes____ No____

18. What is your religion?
    Protestant_____ Catholic_____ Jewish_____ Other_____
    (What?)

19. Are you satisfied with the duties in your job? Yes____ No____

20. Were you raised in a:
    Big City?____ Small City?____ Country?____

21. Have you ever gone to a professional person for help with emotional problems?
    Yes____ No____

22. While in Vietnam, how often do you drink alcohol?
    Never____ Once in a while____ Fairly often____ A great deal____

23. When you smoked marijuana in Vietnam, did you ever get a choking feeling that made you feel you couldn't breathe?
    Yes____ No____

24. Did you ever get really angry with someone or get into a fight after smoking marijuana *in Vietnam?*
    Yes____ No____
25. How long have you been in the service? (Total time)
    Under one year ____
    1 to 2 years ____
    2 to 3 years ____
    More than 3 years ____
26. Are you: US____ RA____ Other (Please describe)_____
27. What is your rank _____
28. How many months have you been in Vietnam?_____
29. What is your race? Caucasian____ Negro____ Other____
30. Have you ever had any Articles 15 since coming into the service?
    Yes____ If so, how many?_____
    No____
31. Have you ever had any:
    Summary courts-martial? Yes____ No____ If so, how many?____
    Special courts-martial? Yes____ No____ If so, how many ____
    General courts-martial? Yes____ No____ If so, how many?____
32. If you have ever had a court-martial and were convicted, please tell the offenses of which you were convicted.
    Type of Court-Martial *Charges*
33. Have you ever been arrested for or convicted of possession or use of marijuana in civilian life or in the military?
    Yes____ No____
34. What is the highest school grade you completed?_____ ___
35. What is your marital status? Single____ Married____ Divorced____
36. Do you think you will smoke marijuana in the future?
    Yes____ No____ Don't Know____

We want to thank you for your help in this study. Please answer one more question for us. This will determine whether or not we can use your questionnaire in our research.

37. Have you answered *all* of the above questions truthfully?
    Yes____ No____

If you haven't answered the questions truthfully, we respect your right to privacy. But, please check the "NO" block if you haven't told the truth. There will be no hard feelings. THANKS!

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