The role of marihuana in patterns of drug abuse by adolescents

Eleven patients, 10 adolescents and one young adult of the middle and upper classes, were studied with respect to patterns of drug usage and clinical effects. Ten were chronic users, one a one-time user. Multiple drug usage was the rule for all but the one-time user. Marihuana was used by all and was most frequently the first drug employed. LSD was the second most frequently used drug, followed by amphetamines. The 7 who were studied psychiatrically prior to drug usage were all diagnosed as having personality disorders. Following drug usage, all 11 were diagnosed as having acute or chronic schizophrenia. Three patients required repeated hospitalization. Chronic social disability, including failure to complete school, delinquency, and participation in a drug subculture, ensued in all of those (10 of the 11) who continued to use drugs.

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A DAILY READING of newspaper headlines indicates that drug usage is a major medicolegal problem in this country[1-3] and suggests that the problem of drug abuse is widening to include the college population,[4-6] the armed forces in Vietnam,[7] and, most recently, suburban high school[8] and preparatory school students.[9] The popular press also reflects, as does the medical literature, widely divergent opinions concerning the safety and desirability of the use of marihuana.[10-12] Arising from the prevalence of marihuana usage, as well as the divided opinion of so-called experts, is the clamor for liberalization of current laws governing the distribution and use of marihuana.[13]

It is the thesis of this communication that marihuana, as used by young people with unstable personalities, is capable of precipitating acute psychoses, may contribute to the production of chronic psychoses, disrupts the young person's way of life, and is associated with multiple drug usage. On these bases, marihuana would appear to be a dangerous drug requiring governmental control.

CLINICAL DATA

Eleven patients are reported, some of whom were studied psychiatrically before and all of whom were studied carefully after the inception of drug usage. Their case rec-

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Table I. Clinical data on group I—predrug diagnosis known

Case No. and sex	*Age at first contact*	*Age at onset of drug use*	*Social class*	*I.Q.*	*Drugs used in order of introduction*	*Predrug diagnosis (first contact)*
1. M	17	18	III	120	Alcohol, marihuana, barbiturates, amphetamines, LSD, hashish	Personality disorder—passive-aggressive, emotionally unstable
2. M	11	22	III	Average	Marihuana, one time only	Personality disorder—passive-aggressive, emotionally unstable
3. M	15	17	I-II	137	Marihuana, barbiturates, amphetamines, LSD, STP	Personality disorder—passive-aggressive
4. F	14	15	I-II	110	Alcohol, marihuana, amphetamines, tranquilizers	Personality disorder—emotionally unstable
5. M	15	18	III	123	Marihuana, LSD	Personality disorder—schizoid, passive-aggressive
6. F	10	15	I-II	115	Marihuana, hashish, amphetamines	Personality disorder—schizoid, paranoid
7. M	12	14	III	93	Marihuana, heroin, LSD	Personality disorder—schizoid

ords are analyzed with respect to age of onset of drug usage, sex, social class of parents, diagnosis prior to drug usage when known (based on standard criteria and nomenclature[14]), diagnosis after drug usage,[14] psychodynamics, school record, and outcome. In all cases the data on outcome have been obtained from one or more of the following: the patient, the parents, and the current psychiatrist or psychotherapist.

The patients are divided into two groups: group I in which the diagnosis prior to drug usage was known by virtue of the patient's having sought psychiatric attention for other reasons, and group II in which the mental state prior to drug usage was not known because there was no prior psychiatric consultation (Tables I, II, and III).

In group I there were 7 patients, all diagnosed on the basis of prolonged study prior to drug usage as having personality disorders. After a variable period of drug usage, 6 of the 7 became chronically schizophrenic. The only patient (Case 2) who did not become a chronic schizophrenic was the only person in the entire series who did not become a chronic drug user and who never used marihuana after the single exposure which precipitated his acute psychosis. Another patient (Case 5) became chronically psychotic while

Postdrug diagnosis	*Psychodynamics*	*School record*	*Outcome*
Acute psychotic reaction—panic, dissociation; followed by chronic schizophrenia, age 18	Heterosexual anxiety, homosexual anxiety, impotence, passivity, rebellion	High school graduate, college dropout	1 arrest for possession of marihuana, attempting college for third time, continuing but reduced drug usage, age 21
Acute psychotic reaction—panic, dissociation, catatonia; recovery to predrug state, age 22	General inadequacy, sexual inadequacy, confusion of sexual identification, passivity	High school graduate, 2 year college	Psychotherapy for acute psychosis, married, working steadily, no drug usage after initial episode, age 25
Chronic schizophrenia, age 18	Heterosexual anxiety, impotence, passivity, depression, rebellion, suicidal preoccupation	High school graduate, college dropout	3 arrests for theft, involvement with racketeers, 2 attempts to return to college, near-fatal reaction to overdose of drugs, continuing drug usage, age 20
Acute psychotic reaction—paranoia, dissociation; followed by chronic schizophrenia, age 15	Heterosexual anxiety, confusion of sexual identity, phobias, depression, rebellion, suicidal preoccupation	High school dropout	Repeated hospitalization, 2 attempts to return to high school, continuing psychotherapy, intermittent return to drugs, age 16
Chronic schizophrenia, paranoid type, age 19	Heterosexual anxiety, homosexual anxiety, impotence, passivity, depression, rebellion	High school graduate, college dropout	1 arrest for theft, member of hippie culture, continuing drug usage, age 20
Acute psychotic reaction—dissociation, paranoia; followed by chronic schizophrenia, age 16	Heterosexual anxiety, phobias, depression, rebellion	High school dropout	Repeated hospitalizations, 2 attempts to continue high school, intermittent use of drugs, age 17
Chronic schizophrenia, age 16	Confusion of sexual identity, dysphoria, rebellion, phobias	High school dropout	Repeated hospitalizations, unable to hold a job, continuing drug usage, 2 arrests, on probation, age 19

using marihuana alone. A third patient (Case 1) developed an acute psychosis followed by chronic schizophrenia while using only marihuana. The other 4 patients in group I (Cases 3, 4, 6, and 7) used multiple drugs in such a way as to obscure the role of any particular drug in the causation of the chronic schizophrenic disorder.

In group II the diagnosis after drug usage in 3 of the 4 patients was chronic schizophrenia and in one was personality disorder. Even on the basis of careful histories one could not be sure of the diagnosis prior to drug usage, but the fact that psychiatric consultation was not sought earlier suggests that drugs contributed in significant measure to impaired functioning. This hypothesis is further supported by the fact that the parents sought consultation because of problems other than drugs and were, in fact, unaware that their children were using drugs.

The clinical features of the two groups were essentially similar, apart from the question of how much of a causative factor were drugs in the ultimate psychiatric disorder. All were youths in mid or late adolescence except for one young adult (Case 2). Boys outnumbered girls by 9 to 2. All were from the middle and upper classes economically, educationally, and vocationally. Five families

Table II. Clinical data on group II—predrug diagnosis unknown

Case No. and sex	*Age at first contact*	*Age at onset of drug use*	*Social class*	*I.Q.*	*Drugs used in order of introduction*	*Predrug diagnosis*
8. M	16	16	III	130	Alcohol, marihuana, amphetamines, hashish	Unknown
9. M	15	15	I-II	135	Marihuana, alcohol, LSD	Unknown
10. M	18	17	I-II	Very superior	Marihuana, heroin, LSD	Unknown
11. M	15	15	III	79	Marihuana, amphetamines, LSD, STP	Unknown

were in Hollingshead and Redlich's[15] social class I or II (professional men) and 6 were in class III (small business owners).

The range of intellectual ability was higher than would be expected if the group had followed a normal distribution curve; 6 of the 11 had I.Q.'s of over 120 and only 2 had I.Q.'s under 100. Despite the generally strong intellectual potential, the record of school achievement was poor, with 9 of the 11 dropping out of either high school or college. Only 2 boys have completed college, one a two-year and one a four-year college. The four-year college graduate, an intellectually gifted person, now works part time at a manual trade. Six of the 11 persons had a history of arrests after starting usage of drugs, the arrests being related directly or indirectly to the involvement with drugs. Some were arrested for illegal possession, others for stealing to support their drug habit. A seventh boy was said by his mother to be "known to the police." In the light of the privileged social and economic circumstances of these young people, this amount of delinquency is impressive.

Ten of the 11 persons became multiple drug users, the only exception being (Case 2) a one-time user of marihuana (Table III). All 11 used marihuana and for 8 it was the first drug employed. The 4 who consumed alcohol used it only occasionally and discarded it in favor of marihuana, barbiturates, and amphetamines once they discovered them. An argument that one user advanced against alcohol and in favor of the other drugs was that the former caused acute gastric symptoms and a headache aftereffect whereas the latter did not. The order of preference after marihuana was LSD followed by amphetamines and hashish. Hashish is a relative newcomer to the United States and seems to be a by-product both of the popularity of world travel and of the Vietnam war. Heroin, which youthful advocates of marihuana claim to eschew, was used by 2 of these patients including the graduate of a four-year college.

Three patients required repeated hospitalization for psychosis. All 3 were among the youngest (one aged 14, two aged 15) with respect to age of onset of drug usage. Two of the 3 were girls, the only girls in the series. The possibility that younger users and girls are more susceptible to the disorganizing effects of chronic drug abuse is a hypothesis that might bear further clinical investigation.

With respect to psychodynamics, the dominant themes were passivity, sexual anxiety including heterosexual and homosexual fears, problems of psychosexual role identification, depression, and rebellion. Dependence on

Postdrug diagnosis (first contact)	*Psychodynamics*	*School record*	*Outcome*
Chronic schizophrenia	Heterosexual anxiety, passivity, rebellion	High school graduate, college dropout	2 attempts to return to college, bizarre behavior, continuing drug usage, age 18
Chronic schizophrenia	Homosexual anxiety, heterosexual anxiety, confusion of sexual identity, suicidal preoccupation, rebellion	High school graduate, college dropout	Member of hippie culture, known to police, attempting college for second time, continuing drug usage, age 19
Chronic schizophrenia	Homosexual anxiety, heterosexual anxiety, depression, passivity	High school graduate, college graduate	1 arrest for possession of heroin, member of hippie culture, bizarre behavior, continuing drug usage, age 25
Chronic schizophrenia	Heterosexual anxiety, passivity, depression, rebellion	High school dropout	1 arrest for theft, working steadily, engaged to be married, continuing drug usage, age 22

marihuana was particularly strong in boys, who found that it enabled them to feel sufficiently at ease to talk to girls, or enabled them to overcome impotence, or suppressed all sexual desire. For the rebellious and the passive-aggressive users, drugs also provided a means of reaction against adult authority. For the phobic, it provided relief and escape. All of these young people had quick tempers, little tolerance for frustration or postponement, and little tolerance for anxiety. They demanded instant gratification and instant relief and found that drugs offered both of these. With the exception of Case 2, none of them was willing to consider the possibility of life without drugs. Most of them refused to acknowledge the deleterious effects. Those who did, felt that they might have had an isolated bad experience or that the satisfactions outweighed the ill effects. Only one person acknowledged an underlying self-destructive motive in his drug usage, although suicidal thoughts were noted in many patients.

CASE REPORTS

The cases of group I, who clearly had drug-related symptoms, are summarized briefly to provide documentation and insight into the psychological processes of these young people.

Case 1. Prior to drug usage, at age 17, this boy received psychotherapy during his senior year of high school because of temper tantrums and underachievement. The psychiatric diagnosis was personality disorder with features of passive aggression and emotional instability. He disliked "competition" and had feelings of sexual inferiority, castration fears, and homosexual fears. He began to use marihuana during the summer after graduation from high school. After having used it several times over a period of 2 weeks, he experienced an episode of panic and disorientation in a railroad terminal in which "I went out of my mind and started hitting my head." On a subsequent occasion he "fell out," i.e., experienced an episode of disorientation and syncope several hours after smoking. He also became quite paranoid, feeling he was "watched and spied upon." Early in his freshman year of college he was arrested and expelled for possession of marihuana. His reasons for continued use of marihuana despite the difficulties he had encountered were his dislike of "arguments" and as an aid in doing school assignments ("when I smoked I understood the assignment perfectly"). Prior to using marihuana he had been an occasional user of alcohol. Subsequently he also used barbiturates, amphetamines, hashish, and LSD. The psychiatric diagnosis after several months of usage of marihuana was chronic schizophrenia with prominent paranoid features.

Case 2. Prior to usage of marihuana this boy had intermittent psychiatric treatment over a period of many years beginning at age 8, be-

Table III. Patterns of drug usage

Drug	*No. using*	*No. using as first drug*
Marihuana	11	8
LSD	7	
Amphetamines	5	
Alcohol	4	3
Hashish	3	
Heroin	2	
Barbiturates	2	
STP	2	
Multiple drugs	10	

cause of enuresis, encopresis, stuttering, and underachievement. The diagnosis, established in a consultation at age 11, was personality disorder characterized by passive aggression and emotional instability. He had a single experience with marihuana at a party, immediately following which he became "panicky, disoriented, and immobilized." He remained depressed, withdrawn, and disoriented for a week and then gradually recovered. The diagnosis was acute psychotic reaction. He never again used drugs.

Case 3. Prior to drug usage a psychiatric consultation was sought for this 15½-year-old boy because of underachievement. The diagnosis was personality disorder of the passive-aggressive type. Although he had many boy friends, he was very uncomfortable with girls, never really dated, and was aware of great heterosexual anxiety. Between his freshman and sophomore years of college he began using marihuana and very soon thereafter barbiturates, amphetamines, and LSD as well. He used drugs to attain a "tranquil, good mood." Without drugs he felt "bored" and depressed and often thought of suicide. On at least one LSD "trip" he experienced powerful homicidal impulses, on several others severe panic. He had several arrests for theft and was involved in drug peddling. On one occasion he required hospitalization for treatment of overdosage. Despite drug usage he was unable to overcome his heterosexual fears and was never able to form even a superficial relationship with a girl. He lay about his home daydreaming, unable to sustain any attempt to work or attend school. He experienced ideas of persecution and consoled himself with grandiose fantasies. He was aware of the delusional nature of his thinking but was unable to control it. The psychiatric diagnosis after prolonged drug usage was chronic schizophrenia.

Case 4. A 14½-year-old girl was seen in psychiatric consultation prior to drug usage because of underachievement and anxiety about school. The diagnosis was personality disorder with elements of hysteria and emotional instability. She had problems of feminine psychosexual identification, phobias, and depression. She took barbiturates, aspirin, and amphetamine "to make myself sick" and thereby avoid school and engage parental sympathy. After using marihuana she "felt high," then afterward felt "awful," "felt crazy," "felt everyone hated me." She also experienced a visual delusion that "I can't see and everything is getting black." She often thought of suicide. She had a compulsion to continue drug usage even though she acknowledged that drugs made her feel paranoid and delusional. After a year of multiple drug usage she required hospitalization at which time the diagnosis was chronic schizophrenia.

Case 5. Prior to drug usage this 15-year-old boy received several years of psychiatric treatment for problems of underachievement, feelings of inferiority, and tics. The diagnosis was personality disorder with passive-aggressive and schizoid features. He complained of feeling "alone" when with people, of being self-conscious with girls, and of heterosexual impotence. During his junior year of college he began to use marihuana. Although he felt that marihuana relieved his depression and enabled him to approach girls without restraint, he remained impotent. His reasons for marihuana usage were to escape from painful self-awareness, to "reduce my ego so that I would not have to think so much." He began to neglect his person, became unkempt, lost weight, and engaged in petty thievery. He believed that he was endowed with exceptional insight. His mood was labile, varying from depression to silliness. He subsequently added LSD to his regular drug usage, dropped out of school, complained of feeling "lost, mixed up, and confused," and requested hospitalization. The diagnosis after several months of marihuana usage was chronic schizophrenia with borderline psychotic functioning.

Case 6. Prior to drug usage this girl had many years of psychiatric treatment, beginning at age 10½, because of fears, tantrums, and moodiness. The diagnosis was personality disorder with schizoid and paranoid features. She had problems of psychosexual identification, acceptance of authority, and depression. She began to use marihuana at the age of 15 years because it was

an accepted school custom. After a few months of marihuana and one experience with amphetamine she experienced somatic delusions ("a chill in my head," "chest pain") and paranoid delusions ("believed I was a sorceress") and required repeated hospitalization. The diagnosis after several months of drug usage was chronic schizophrenia.

COMMENT

Since the time of the so-called La Guardia Report in 1944,[16] the American literature has been strikingly devoid of any documentation of the deleterious effects of marihuana. One exception is the very recent report of Keeler[17] describing adverse acute reactions to marihuana in 11 college students and schizophrenic reactions in 4 others who used a combination of marihuana, LSD, and amphetamine. Another current contribution is that of Toker,[18] who described a self-limited schizophrenia-like illness among the Bantus following marihuana. It would appear from Keeler's experience as well as from this communication that in the United States one segment of the population at risk is the privileged, educated youth who is predisposed by virtue of a pre-existing personality disorder. The risk is compounded by the fact that these young users tend not to confine themselves to a single hallucinogenic or narcotic drug. Both their need for relief of psychic discomfort and the subculture to which they gravitate provide the reason and the means for extensive experimentation. These are troubled, isolated, alienated people for whom group drug usage provides a sense of community that they find themselves unable to achieve by normal social means. Various phases of the psychological development of adolescence remain unresolved, notably an appropriate psychosexual identification, satisfactory heterosexual functioning, and choice of a life goal. When drugs are employed for blunting the pain of these adolescent experiences, the result is psychologic dependence on drugs and a deferment of the problem solving that might obviate the need for drugs. For many adolescents with a pre-existing personality disorder and poorly developed psychological defenses, the drugs are sufficient to dissolve these fragile defenses and facilitate the emergence of a psychotic process. For those who do not become psychotic, the failure to make use of the adolescent years to solve adolescent problems means the emergence of immature, poorly integrated, drug-dependent adults.

One of the traits that all of the boys of this series have in common is passivity. In a society which calls for a high degree of independence and initiative, the adult man with passive personality traits can be seriously handicapped. Failure of our youth to take advantage of the adolescent years to solve their passivity problems will result in a decrease in the percentage of strong, enterprising, psychologically able members in our adult population. If one considers that the drug-dependent youths also include those with superior intelligence, the ultimate social cost is all the more a matter of public concern.

ADDENDUM

Subsequent to the submission of the manuscript, one patient (Case 7) died at age 20 of hepatitis incurred as a complication of intravenous administration of heroin.

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