

THE RELATIONSHIP BETWEEN ANXIETY
AND MARIJUANA USE

A Thesis

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Chapter 1

INTRODUCTION

The marijuana smoker creates a variety of reactions. Many of the reactions are the result of emotional exaggeration and cultural bias. Goode observed that most users consider themselves more aware of the brilliance of color, the sounds of music, and of the complexity of life in general. Others consider the marijuana smoker to be a hostile, defiant, sexually immoral, emotionally unstable young person who is bordering on addiction and is probably supporting his habit through criminal activity.¹ An example of Goode's observations is the ruling of the Court of Massachusetts in 1967 which stated that marijuana use causes sexual promiscuity.² All these observations have one thing in common; that is, they are all somewhat meager attempts to understand a misunderstood phenomenon, the marijuana smoker.

The preceding descriptions are attempts to understand and to place all users into a convenient category for the purpose of observation. One term which is often

¹Erich Goode, The Marijuana Smokers (New York & London: Basic Books, 1970), pp. 38-56.

²Ibid., p. 47.

applied to the user's personality is anxiety. Some observers have suggested that the user of marijuana has more anxiety to cope with than other people do. Coles stated that, "It is not enough to explain that a youth smokes grass (marijuana) because he feels anxiety and wants to subdue it or because he feels afraid and wants to feel less so."³ In this statement the existence of anxiety is taken for granted. Although the author indicated that this type of explanation is inadequate, he demonstrated the existence of such ideas.

Some youths have been described as anxious and feel that the description is inaccurate. One youth, interviewed by Brenner, had this to say, "You smoke a joint and you find out it's you they've been describing with all those words: anxiety, phobias, and addiction and all the rest."⁴

In a study of marijuana smokers in a university setting, Keeler observed that of those who elected to continue frequent use of marijuana the majority, "sought to relax, to feel good, to forget their worries, and to be relieved of tensions and inhibitions or to experience

³ Joseph H. Brenner, Robert Coles, and Dermot Meager, Drugs and Youth (New York: Liverwright Publishing Company, 1970), p. 107.

⁴ Ibid., p. 111.

a state in which they could blow off steam."⁵ The implication is that the users expressed the belief that they were driven by the need to relieve internal tension and anxiety.

THE PROBLEM

The marijuana user is probably one of the most misunderstood elements of today's society. The beliefs which surround his life and habits are many and varied. He has been seen as stricken with anxiety and as smoking marijuana in an effort to cope with it. The implication is that the user of marijuana has a good deal more anxiety to cope with than other people do. The cause of this anxiety is supposedly the complexity and the rapid change of today's hectic world. This is not, however, a universal opinion, although some observers have attempted to classify users according to the level of anxiety that they experience. The examiner herein explored the difference in anxiety level between users and nonusers of marijuana.

Statement of the Problem

Is there a significant difference between users and nonusers of marijuana in the level of anxiety that they experience?

⁵Martin Keeler, "Motivation for Marijuana Use: A Correlate of Adverse Reaction," The American Journal of Psychiatry, 125:3, September 1968, p. 386.

Statement of the Hypothesis

There is no significant difference between users and nonusers of marijuana in the level of anxiety that they experience.

Purpose of the Study

This study was conducted to determine if there is a significant difference between users and nonusers of marijuana in the level of anxiety that they experience.

Significance of the Study

When one reads of the upswing in the amount of illegal drug use on the college campus, he can also see an equally large number of reasons for its occurrence. The reader will bear witness to the variety and inconsistency of many of these explanations of this current phenomenon. Some of the explanations make reference to the tension and anxiety that prompts the use of marijuana. They assume that the user of marijuana has more anxiety to cope with than other people do. This strongly felt pressure has been proposed by these writers as a strong determinant in the habitual use of the marijuana cigarette. If this study reveals that, in fact, a significant difference does exist, then measures can be taken to deal with it. If, however, no difference appears, then other explanations must be entertained.

DEFINITION OF TERMS

In this section, terms that will be used throughout the text of this paper are defined to clarify their usage.

Frequent user. This term refers to the individual who uses marijuana once each week or more. It refers specifically to the members of Group I (users) who were included in the sample used for this study. This definition was adopted from a study done by the Bureau of Narcotics and Dangerous Drugs, U.S. Department of Justice.⁶

Nonuser. This term refers to the individual who has never used marijuana.

MAS. This abbreviation refers to the Taylor Manifest Anxiety Scale which was the instrument used to examine the participants.

MMPI. This abbreviation refers to the Minnesota Multiphasic Personality Inventory from which the MAS and the L, K, Sc, and D scales were taken.

L scale. This scale measures the extent to which the person lies or attempts to present a false picture of himself. This scale was included to establish validity.

⁶William Eckerman, James Bates, J. Valley Rachel, and Kenneth Poole, Drug Usage and Arrest Charges, Bureau of Narcotics and Dangerous Drugs, U.S. Department of Justice, Washington Press, 1971, p. 33.

K scale. A high score on this scale tends to show a person who minimizes his own faults. It was included to see if any marked group differences would appear.

Sc scale. This scale is a reasonably good indicator of reality contact and was included for that reason--to see if any marked group differences would appear.

D scale. Since depression and anxiety are sometimes difficult to separate, the writer believed it was necessary to include this scale to measure depression.

LIMITATIONS OF THE STUDY

This study was made with a specific group of users and nonusers for the purpose of comparison. The sample groups were selected from the undergraduate student body of the Kansas State Teachers College and as such can only have implications as to the remainder of the student body. The use of stratified sampling would be necessary to indicate general conclusions about the remainder of the student body.⁷

⁷Max D. Englehart, Methods of Educational Research (Chicago: Rand McNally and Company, 1972), p. 309.

Chapter 2

REVIEW OF LITERATURE

The material in this chapter is presented in a manner which has hopefully demonstrated some of the varied reactions to the marijuana smoker. The material indicated that the preponderance of present literature has not been in agreement.

Anxiety as a Motivating Factor in Marijuana Smoking

Frequent users of marijuana are motivated to use the illegal drug for a variety of reasons. One of the reasons, as some see it, stems from the physical reaction to marijuana. Since marijuana reportedly produces a euphoric state of mind, then it has been assumed that the opposite of this has been the state of mind from which the user has fled.⁸ This idea takes it for granted that the user is depressed or anxious and the use of marijuana is an escape mechanism. It assumes that the frightened, anxious person will seek any form of relief from the condition; he will even use illegal drugs.

Goode observed the same type of idea within the medical profession. "Probably the commonest view of

⁸Brenner, Coles, Meager, op. cit., p. 94.

marijuana use within the medical profession is that it is a clumsy and misplaced effort to cope with many of one's most pressing and seemingly insoluble problems."⁹ The anxiety which has been produced by these "insoluble problems" is seen as the primary motivation for marijuana use.

The opinion that marijuana use is a mechanism for coping with anxiety is also shared by members of the psychiatric profession. A team of psychiatrists studied twenty patients in Vietnam who were suffering from marijuana psychosis. They concluded that one of the strongest motivating factors which precipitated the excessive use of marijuana was the need to reduce anxiety. They believed that these individuals were more anxious than the majority of military personnel. They also indicated that the needs for group identification and interpersonal relationships were contributing factors. Among the general population of military personnel the incidence of general anxiety, understandably, ran very high. Other methods used to cope with this anxiety were excessive use of alcohol, sexual promiscuity, and violence. The research indicated that the level of anxiety which was experienced by these twenty patients was higher than for the majority of other soldiers.¹⁰

⁹Goode, op. cit., p. 72.

¹⁰Douglas R. Bey and Vincent A. Zecchinelli, "Marijuana as a Coping Device in Vietnam," Military Medicine, 136:5, May 1971, p. 450.

The use of marijuana as a method of coping with anxiety has been taken for granted by some writers. Blaine stated that, "For some, marijuana does provide temporary surcease from feelings of inferiority, but for most it provides only numbness and moderate relief from anxiety."¹¹ In this statement Blaine expressed the belief that the motivation for smoking marijuana is the need to reduce anxiety. The feelings of inferiority were the cause of the anxiety and the use of marijuana was the reaction to them. The marijuana produced no true or constant feeling of superiority and as a result the user again seeks temporary relief from anxiety, thus producing psychological dependence on the drug.

Farnsworth and Weiss made a similar observation. They noted that some, not all, users have problems of various kinds which lead to anxiety. Concern about the future, doubts about sexuality, and emotional conflicts are some of the problems discussed. "Then they try marijuana with the hope that it will give them relief from their tensions."¹² If they do find relief from the tension, then it is likely that they will continue with that form of escapism. With regard to the remainder of

¹¹Graham B. Blaine, Youth and the Hazards of Affluence (New York: Harper Colophon, 1967), p. 68.

¹²J. R. Wittenborn, Henry Brill, J. P. Smith, S. A. Wittenborn, Drugs and Youth: Proceedings of the Rutgers Symposium on Drug Abuse (Illinois: Thomas Books, 1967), p. 175.

the users that were used for this study these two authors stated that, "The use of marijuana appears to be based on attitudes and opinions in a particular culture rather than on any specific need."¹³ They indicated that there is a marked difference between individual users and it is difficult to assess group characteristics.

Some of the research which indicates that anxiety is closely related to marijuana use may have originated with the users themselves. Farnsworth and Weiss stated that, "Those who were nervous or worried reported that sometimes the drug relieved their tensions."¹⁴ The users reported that the need to relax was their primary reason for using the drug.

Goode observed the same type of idea among the people in his study. "I take marijuana because it relaxes me and I need to relax."¹⁵ Many reports were received by Goode which make reference to the tension and pressure which preceded their use of marijuana.

In a study conducted by a group of psychiatrists and psychologists in two New York colleges a group of 286 student marijuana users was used. They were given a modified version of Gough's Adjective Checklist. The participants in this study were individuals who had used marijuana once each week or more. It was discovered that

¹³Ibid., p. 168

¹⁴Ibid., p. 171.

¹⁵Goode, op. cit., p. 72.

one of the terms which users most frequently described themselves with was "anxious."¹⁶ As an item of interest, only 8 percent of the 104 males tested used marijuana more than once a week. The percentage of individuals using marijuana more than once a week used for this paper was much greater.

As previously stated in the first chapter the students interviewed by Keeler ~~stated~~ that they used marijuana to forget their worries and tensions. Perhaps the observation that marijuana use and anxiety are closely related comes from the users as frequently as it comes from outside observers. If one accepts the idea that frequent use of marijuana can be attributed to anxiety, then he could expect that the incidence of marijuana use would be higher for those who experience anxiety than for those who do not. Cattell found that the incidence of anxiety among college students was higher for the female population than for the males.¹⁷ This being true, we might conclude from this that the incidence of marijuana use would also be higher. However, Goode found in his survey of the typical marijuana smoker that the number of male users is much greater than the number of female

¹⁶E. S. Robbins, W. A. Frosch, and Marvin Stern, "College Student Drug Use," American Journal of Psychiatry, 126:12, June 1970, pp. 1743-1751.

¹⁷R. B. Cattell, "The Nature and Measurement of Anxiety," Scientific American, Vol. 208, March 1963, pp. 96-105.

users.¹⁸ The matter becomes more confusing when one reviews the survey by Nuemann which measured the anxiety levels of college freshmen and sophomores. Nuemann concluded from his survey that males had a higher level of anxiety than females.¹⁹ This leads us to believe that there are probably variables to be considered in conjunction with sex when assessing anxiety levels.

Anxiety as Unrelated to Marijuana Smoking

The anxiety that is reported by most of the previously cited authors reportedly stems from the rapidly changing and tremendously complex society in which we live. In regard to this Kuehn stated that, "This gives rise to anxiety in any reasonably intelligent and introspective person from time to time."²⁰ Thus he indicated the belief that the nonuser has as much anxiety to contend with as the user. He believed that to explain drug use in terms of anxiety is simply an insufficient explanation. In a later publication Kuehn stated that anxiety is not a primary cause of marijuana abuse; rather, it is caused

¹⁸Goode, op. cit., p. 33.

¹⁹Joseph Nuemann, "Sex Differences in Anxiety Scores for College Freshmen and Sophomores," The Journal of Psychology, Vol. 74, January 1970, pp. 113-115.

²⁰John L. Kuehn, "Counseling the Student Drug User," Bulletin of the Menninger Clinic, 34(4), July 1970, p. 207.

by, "an arrested state of psychosocial development."²¹
The user has progressed to a certain stage of development
and has ceased to progress. He has become a socially
immature person. Such is the dilemma surrounding the life
of the marijuana smoker.

²¹John L. Kuehn, "The Student Drug User and His
Family," Journal of College Student Personnel, 11(6),
November 1970, p. 411.

Chapter 3

METHODS AND PROCEDURES

The Sample

Two sample groups were selected from the undergraduate student body of the Kansas State Teachers College. Group I was selected on the basis of age, education, and frequency of marijuana use. The subjects were between the ages of eighteen and twenty-five years, undergraduates of KSTC, and used marijuana once each week or more. Group II was selected by the same set of factors, that is, age, education and frequency of marijuana use. The members of Group II had never used marijuana at all and were matched with the other group on all other variables. No females were used in the study since they were not available in sufficient number. There were twenty-five subjects in each group.

Procedure and Data Collection

Due to the fact that marijuana use is illegal, caution was used at all times to exclude the identity of all participants. The members of Group I were made known to this writer by an individual who sold marijuana. To eliminate the possibility of bias, the participants were not told the nature of the study. The initial

contact was made through the dealer. Only those individuals who were regular buyers of marijuana were included in the study. At the request of the writer, the dealer agreed to find out how frequently the potential participants used marijuana. This information was quiet easily obtained since, among users, the topic of conversation is often about the marijuana they are presently using as compared to the marijuana they had the week before. At a later date those users who fitted the qualifications of the experimental design were asked to help this writer in the completion of his degree requirements as a personal favor to the dealer. Every effort was made to delete any mention of the use of marijuana as a determinant in the selection of the participants. Those who asked about the nature of the study were told that it was a survey.

All examinations were administered in a distraction free setting by the writer. The examiner remained on the premises at all times. The examinations were given individually on all but two occasions. On these two occasions, three persons took the examination simultaneously and without outside interference. The nature of the study was not divulged to the participants after completion of the test. When questions came up about the items on the examination, the subjects were told to reread the directions. This answer proved to be sufficient. None of the subjects were under the influence of marijuana at the time of testing.

The members of Group II were selected on the same basis; the nature of the study was not divulged. A trusted friend of this writer talked to potential subjects and established whether or not they had ever used marijuana. This was established in a noncommittal way as part of an everyday conversation. At a later date, those individuals who had never used marijuana were asked to aid the writer in the completion of his degree requirements as a personal favor to the interviewer. The interviewer who aided the writer in the project was not a user of marijuana and consequently associated with people who did not use illegal drugs of any kind. A total of fifty people (twenty-five in each group) were used for the study.

The Instrument

All participants were rated according to the scores they attained on the Taylor Manifest Anxiety Scale (MAS). The fifty items of the MAS were embodied within one hundred other buffer items which were selected from the Minnesota Multiphasic Personality Inventory (MMPI). All items (fifteen) from the L scale were included to establish validity. Those individuals who attained an L score of twelve or more were excluded. The one hundred buffer items were taken from the K, Sc, and D scales. Out of seventy-three items fifty-four were selected from the Sc scale. Out of twenty-seven K items, twenty were selected. Out of fifty-one D items, forty-four were

selected. Some of the items are repeated from scale to scale and all items of this type were included. The remainder were selected at random and all of the items were arranged on the examination in that manner.

Statistical Procedure

The statistical procedure used was a t test which was taken from Anderson.²² The t test was used to measure the significance of differences for the L, K, Sc, D, and anxiety scales for the two groups. The .05 level of confidence was used for significance. All statistics were computed by the examiner.

²²Barry S. Anderson, The Psychology Experiment (2nd Edition, Belmont, California: Wadsworth Publishing Company, 1971), p. 175.

Chapter 4

ANALYSIS OF DATA

The statistical data presented in the following discussion were the results of fifty raw test scores. Each group consists of twenty-five tests. The mean value for each scale is presented in Table 1 and the t score for each scale is presented in Table 2. The item most relevant to the study is the t score for the anxiety scale. The null hypothesis under investigation was:

There is no significant difference between users and nonusers of marijuana in the level of anxiety that they experience.

Other information concerning the other scales in the statistical analysis is included for informative value rather than pertinence to the hypothesis.

Table 1

Mean Values for L, K, Sc, D, and Anxiety Scales for Users vs. Nonusers

Scale	Group I	Group II
L	4.32	2.48
K	10.76	11.20
Sc	10.16	8.88
D	13.36	12.12
Anxiety	13.36	16.40

Table 2 indicates that the only significant difference between the two groups was on the L scale. Group I had a significantly higher mean score than Group II on the L scale. These results seem to indicate that the user tends to present an inaccurate picture of himself with more frequency than the nonuser does. Although the .05 level of confidence had been previously established for significance, the difference in the means of the L scale was significant at the .01 level. None of the other scales showed a significant difference. Based on the results of this experiment the null hypothesis was accepted.

Table 2

t-Scores for L, K, Sc, D, and Anxiety
Scales for Users vs. Nonusers

Scale	df	<u>t</u> -Score
L	48	* 3.38
K	48	1.31
Sc	48	.27
D	48	1.47
Anxiety	48	1.21

* Significant at the .01 level of confidence although the .05 level had been previously specified

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

Some of the literature about the marijuana user and his personality is not in agreement. A number of the researchers make reference to the anxiety that is experienced by the user. Some feel that the user has more anxiety to cope with than other people do and he is motivated to use marijuana in an effort to cope with it. This idea is not totally accepted nor is it backed by conclusive research. It was the purpose of this study to attempt to measure the difference between users and nonusers of marijuana in anxiety levels. Since previous measures of this kind could not be found and are apparently nonexistent, it seemed to be prudent to clarify the issue with properly conducted research. Thus, the hypothesis was formulated.

There is no significant difference between users and nonusers of marijuana in the level of anxiety that they experience.

For the study, twenty-five frequent users of marijuana were selected on the basis of sex, age, race, education and frequency of marijuana use. This group was matched with a second group on all variables except one. These individuals had never used marijuana. The members

of the first group had used marijuana once a week or more. All participants, white, undergraduate, males of Kansas State Teachers College, were rated according to their performance on the Taylor Manifest Anxiety Scale. The MAS was taken from the Minnesota Multiphasic Personality Inventory along with one hundred buffer items from the L, K, Sc, and D scales. The significance of differences between the two groups on all five scales was determined by a t test. The names of all participants were kept confidential and participation was totally voluntary.

Although this study cannot be and is not intended to be the final word concerning anxiety and marijuana and the relationship between them, the results are worthy of consideration.

CONCLUSIONS

Analysis of data showed the only significant difference was on the L scale. The frequent users had a significantly higher mean score (4.32) on the L scale than the nonusers (2.48). None of the other scales demonstrated a significant difference. The results being such as they were, the null hypothesis was accepted. There is no significant difference between the anxiety levels of the two groups.

The L scale was designed to measure the extent to which an individual presents a false picture of himself. The reader should keep in mind, however, that although

there was a significant difference in relation to the L scale mean, one should exercise caution when interpreting the quantitative value of the L scale score. The standardization group used in the construction of the MMPI attained an L score of 4.16. This means that Group I (frequent users) were slightly above the standardization mean and Group II (nonusers) were slightly below it. Both of the mean values fell within the normal range. An L score of five means that an individual tends to give socially approved answers regarding self-control and moral values.²³

No significant differences appeared in the other scales. Only part of the K, Sc, and D scales were used in the construction of the examination used for this study. This makes the mean values of these scales meaningless when comparing them to the means of the standardization group. The value lies in the difference between means. Based on the statistical results this writer concluded that the users are approximately equal to nonusers with regard to depression, reality contact, and the acceptance of one's own shortcomings.

The relative value of this study was limited by the following factors:

1. The groups used for the study were small and limited to the undergraduate student body. As such, they

²³Abdul Basit, "Interpretation of the MMPI," (paper used at the Osawatomie State Hospital, Osawatomie, Kansas, for MMIP interpretations), September, 1972.

can only have implications about the remainder of the student body and no general conclusions may be drawn.

2. Only male users were included and therefore the study cannot indicate conclusions about the female user.

3. Only Caucasians were included since no other races purchased marijuana from the dealer who participated. The dealer stated that members of other racial groups had never approached him to buy marijuana.

RECOMMENDATIONS

Based on the results of this study, the following recommendations are offered to individuals who might wish to do a follow-up study in this area.

1. A larger group should be used. The group should be compiled through the use of stratified sampling. If these two suggestions were followed, more general conclusions could be drawn. The larger the groups the more accurate the predictions based on them will be. The group should be representative of the whole population.

2. If a follow-up study were done, a different definition of frequent user should be established. The writer observed a good deal of difference between the individuals who smoked marijuana once a week and the ones who used it daily. Perhaps the individual who used it daily should simply be classified as a daily user.

Frequent use could be defined as using marijuana between one and three times per week.

3. Additional research should control the effect of long term marijuana use on anxiety.

4. Since there was no significant difference in anxiety level between users and nonusers of marijuana, it is recommended that future researchers look for factors other than anxiety that might differentiate between the two groups.

The possibility exists that all the scales could have been affected by continuous use of marijuana.

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