

Attitudes of Professional Students Toward Legal Control of Psychoactive Substances

WILLIAM M. BURKE, M.D. and MARTIN B. MARX, Ph.D.

APPROPRIATE legal control of psychoactive substances has plagued governments during the 20th century (1, 2). The earliest legislation in the United States was the act of 1887, which Congress passed to control the importation of nonmedical opium. Legal controls became a matter

Dr. Burke is resident and Dr. Marx is assistant professor, department of community medicine, University of Kentucky Medical Center. Tearsheet requests to Dr. Martin B. Marx, Department of Community Medicine, University of Kentucky Medical Center, Lexington, Ky. 40506.

of international law in 1912, when the First International Opium Convention was convened at The Hague.

Control in the United States has evolved through a series of laws. The Harrison Act of 1914 was basically a tax on the production or transfer of narcotic drugs and cocaine. The shortlived Volstead Act prohibited the nonmedical use of alcohol between 1919 and 1933. The Marijuana Tax Act of 1937 added marijuana to the group of controlled substances. The Narcotics Control Act of 1956 revised penalty structures. The Drug Abuse Amendments of 1965 restructured the controls on stimulants and

sedatives and introduced controls for the newer hallucinogenic agents. The recently enacted Controlled Dangerous Substances Act of 1969 was subjected to extensive debate before passage, and it remains controversial.

The U.S. system of control has been condemned by some as legal-punitive instead of medically oriented (3). While this may have been true in the past, the trend is away from severe mandatory penalties and toward increased interest in the medical and social aspects of the problem (4). After almost a century of debate, however, a national consensus has not yet been reached.

Because mechanisms of con-

trol were apparently in a period of transition, we initiated a survey of a group of professional students—chosen because they will play an important role in determining legal controls of the future—concerning the appropriate legal control of psychoactive substances. They were pharmacy and medical students, who will be responsible for assembling and communicating scientific evidence, and law students who, as attorneys, judges, and legislators, will codify, interpret, and implement future control measures.

Methods

The survey was carried out during the spring and fall of 1969 at three universities in the Ohio River Valley. Data were gathered by using a self-administered, anonymous questionnaire that had been constructed during the fall of 1968 at one of the participating universities and pre-tested on small groups of graduating professional students. The questionnaires were completed in groups during or immediately after class periods.

Participation was voluntary, and students were not aware that a survey was to be conducted until it was actually administered. Permission to conduct the survey was granted by the deans of the three law schools, the two colleges of pharmacy, and two of the three medical schools in the area. It was possible to survey all classes in these schools except a class of medical students entering their fourth year and a class of law students entering their second year.

In the classes surveyed 1,882 students were enrolled, and responses were obtained from 1,586, or 84.3 percent. The response rate among the medical students was 88.7 percent,

among the pharmacy students 84.6 percent, and among the law students 79.9 percent. The majority of nonrespondents were those not in school on the day the questionnaire was administered. Of the students present and given an opportunity to complete the questionnaire, less than 5 percent in any group refused.

The questionnaire included seven scales assessing various attitudes and a series of items regarding personal use of psychoactive substances. Analysis of the seven scales consisted of a rank ordering of the students' responses along integer scales. The significance of differences was not examined by statistical methods since a probability sample was not used, and differences of less than 5 percent were not considered meaningful.

The supervision of drug use scale was a Likert scale (5) with the extent of agreement distributed over a 5-point range. It consisted of four statements that determine the amount of supervision thought to be appropriate when psychoactive substances are used. Missing data were assigned an intermediate value of 3.

The indications for drug use scale was constructed from 20 responses to the question: "Which of the following are appropriate reasons for using drugs?" It was also a 5-point Likert scale. Individual items not completed were assigned an intermediate value of 3. The scale included responses ranging from very traditional indications such as "to relieve pain during terminal illness" to quite nontraditional indications such as "to give you pleasure."

Three scales concerning general punitiveness, punitiveness to users, and punitiveness to sellers assessed the students' attitudes

concerning legal penalties appropriate for transgressors of the law and for users and sellers of various psychoactive substances. Scores were derived by weighting the severity of the penalty chosen on 16 items in response to the question: "As a judge, how would you sentence the following people brought before you?" Transgressors on the general punitive scale ranged from "litterbug" to "murderer," while users and sellers of certain psychoactive substances were the transgressors on the user-seller scales. Individual items not completed were assigned the mean score of other items on the specific scale.

The knowledge scale consisted of seven statements, which were independently verified as true or false by clinical pharmacologist Harris Isbell, M.D., of the University of Kentucky, and sociologist John C. Ball, Ph.D., of Temple University. Their concordance was 100 percent. In scoring, 2 points were given for an uncertain response, and 0 for a response in disagreement with the experts.

The religious scale, included as an independent measure of traditionality, is derived from the responses to two questions: "How important is religion to you personally?" and "Do you believe in a God who can answer prayers?" Responses fulfilled the criteria of Guttman (5) for unidimensionality (coefficient reproducibility=0.97). Scores ranged from the most traditional (that is, religion is very important and belief in a God who can answer prayers) to the most nontraditional (that is, religion is of no importance and denial of a personalized God).

Eight items were used to assess the degree of legal control appropriate for various psychoactive

substances. The degree of control indicated appropriate for a specific substance was compared with Federal controls for that substance.

Results

Supervision of drug use scale. Scores ranged from 1 to 17 and were directly related to the degree of supervision deemed appropriate. On the basis of the observed frequency distribution, individual scores of 11 or less were arbitrarily classified as low or nontraditional supervision, and individual scores greater than 11 were classified as high or traditional supervision.

In each professional group the greater proportion of students favored high or traditional supervision (table 1). Pharmacy students favored high supervision to a greater extent than medical or law students, whose attitudes

were similar. When a distinction was made within groups between students who had completed less than 2 years of schooling—hereafter referred to as novice students—and students who had completed 2 or more years of schooling—hereafter referred to as established students—the established students of medicine and law tended to favor traditional supervision more than the novice students.

Indications for drug use scale. Scores ranged from 1 to 81, with a direct relationship between the strength of agreement with the stated indication and score, such that the lower the total score the less traditional, and the higher the total score the more traditional are the person's attitudes toward the use of drugs. Individual scores of 39 or less were arbitrarily classified as low or nontraditional and scores

greater than 39 as high or traditional.

In each school the greater proportion of students had traditional attitudes (table 1). Pharmacy students expressed traditional attitudes to a greater extent than law or medical students. Established students of pharmacy were less frequently traditional, while established students of law were more frequently traditional than their novice counterparts.

Religious beliefs scale. Scores ranged from 1 to 4 and were directly related to the traditionalism of beliefs. Individual scores of 2 or less were classified as nontraditional and scores greater than 2 as traditional.

More than half of the students in each professional school had traditional religious beliefs (table 1). The proportion of traditional students varied between schools,

Table 1. Attitudes and knowledge of professional students toward use of psychoactive drugs, in percentages

Attitudes and knowledge	Total			Completed less than 2 years of school			Completed more than 2 years of school		
	Pharmacy (N=325)	Medicine (N=643)	Law (N=618)	Pharmacy (N=151)	Medicine (N=355)	Law (N=432)	Pharmacy (N=174)	Medicine (N=288)	Law (N=186)
Supervision:									
Nontraditional.....	8.0	31.3	33.3	9.3	36.1	35.4	6.9	25.3	27.
Traditional.....	92.0	68.7	67.0	89.7	63.9	64.6	93.1	74.7	72.
Indications for use:									
Nontraditional.....	34.8	42.0	41.3	28.5	42.5	43.5	40.2	41.3	36.0
Traditional.....	65.2	58.0	58.7	71.5	57.5	55.5	59.8	58.7	64.0
Religious beliefs:									
Nontraditional.....	16.6	45.1	36.4	12.6	43.7	38.7	20.1	46.9	31.2
Traditional.....	83.4	54.9	63.6	87.4	56.3	61.3	79.9	53.1	68.8
General punitiveness:									
Low.....	11.1	35.0	21.8	9.9	36.9	19.7	12.1	32.6	26.9
High.....	88.9	65.0	78.2	90.1	63.1	80.3	87.9	67.4	73.1
Punitiveness toward seller:									
Low.....	5.2	30.2	21.5	6.0	32.1	22.9	4.6	27.8	18.3
High.....	94.8	69.8	78.5	94.0	67.9	77.1	95.4	72.2	81.7
Punitiveness toward users:									
Low.....	52.6	84.3	75.4	43.7	84.8	75.2	60.3	83.7	75.8
High.....	47.4	15.7	24.6	56.3	15.2	24.8	39.7	16.3	24.2
Knowledge:									
Low.....	47.4	27.7	42.2	61.6	33.2	43.5	35.1	20.8	39.2
Moderate.....	44.9	64.4	56.3	37.7	65.6	54.9	51.1	62.8	59.7
High.....	7.7	7.9	1.5	.7	1.1	1.6	13.8	16.3	1.1

with pharmacy highest, law intermediate, and medicine lowest. Within groups, fewer established students of pharmacy and more established students of law were classified as traditional than their novice counterparts.

Punitiveness scales. On the general punitive scale, the range of scores was 1 to 29 in direct relationship to the degree of punitiveness. Students with scores of 7 or less were arbitrarily classified as low punitive, while a score of greater than 7 was classified as high punitive.

In each professional group, proportionally more students were classified as high punitive than low punitive (table 1), although these proportions varied between schools, with pharmacy the greatest, law intermediate,

and medicine the least. Within the law school the proportion of students classed as high punitive was greater among novice than among established students.

On the seller punitive scale, the scores ranging from 1 to 17 were directly related to degree of punitiveness. Students were arbitrarily classified as low punitive when they scored 5 or less and as high punitive when they scored greater than 5. The pattern among students was similar to that observed for general punitiveness except within groups, where there was no meaningful variation.

On the user punitive scale, the possible scores ranged from 1 to 21 and were directly related to degree of punitiveness. Individual scores of 4 or less were arbitrar-

ily classified as low punitive and scores greater than 4 as high punitive.

In sharp contrast to the general and seller scales, a greater proportion of students in each professional school was classified as low punitive than high punitive. Differences between professional groups were similar to the pattern established on the general punitive scale. Novice and established students within the groups of law and medicine were similar, but a greater proportion of novice than established students of pharmacy were classified as high punitive.

Knowledge scale. For the purpose of this scale, knowledge was conceptualized as the ability of a person to recognize whether he had specific factual informa-

Table 2. Students favoring current legal control of certain psychoactive substances, in percentages

Substance	Total			Completed less than 2 years of school			Completed more than 2 years of school		
	Pharmacy (N=325)	Medicine (N=643)	Law (N=618)	Pharmacy (N=151)	Medicine (N=355)	Law (N=432)	Pharmacy (N=174)	Medicine (N=288)	Law (N=186)
Barbiturates.....	94.8	88.0	69.7	91.4	82.3	68.3	97.7	95.5	73.1
Alcohol.....	75.4	68.1	64.9	70.2	67.6	67.0	79.9	68.8	60.8
Tranquilizers.....	94.2	86.0	69.6	90.7	78.9	69.0	97.1	95.1	71.0
Morphine.....	91.1	92.2	83.2	88.7	89.9	81.2	93.1	95.1	88.2
Amphetamines.....	92.9	88.0	71.8	89.4	85.1	71.1	96.5	92.0	74.1
LSD ¹	94.5	79.2	71.7	91.4	72.1	71.5	97.1	87.8	72.0

¹ Lysergic acid diethylamide.

Table 3. Student attitudes on control of marijuana and heroin, in percentages

Attitude	Total			Completed less than 2 years of school			Completed more than 2 years of school		
	Pharmacy (N=325)	Medicine (N=643)	Law (N=618)	Pharmacy (N=151)	Medicine (N=355)	Law (N=432)	Pharmacy (N=174)	Medicine (N=286) ¹	Law (N=186)
Marijuana:									
Free access.....	14.2	54.4	54.0	17.2	59.7	56.5	11.5	48.3	48.4
Medical supervision.....	16.0	15.7	17.0	19.9	15.8	15.0	12.6	15.7	21.5
Current controls favored.....	69.8	29.5	29.0	62.9	24.5	28.5	75.9	36.0	30.1
Heroin:									
Free access.....	.6	1.4	2.4	1.3	2.0	2.8	0	.7	1.7
Medical supervision.....	33.5	58.2	49.8	40.4	54.9	49.5	27.6	62.4	50.5
Current controls favored.....	65.8	40.3	47.7	58.3	43.1	47.7	72.4	36.9	47.8

¹ 2 nonrespondents.

tion. For our study, the specific factual information concerned only psychoactive drugs.

Scores of the scale ranged from 1 to 15 and were directly related to knowledge possessed. Individual scores of 8 or less were classified as low knowledge, 9 to 12 as moderate knowledge, and 13 or greater as high knowledge.

A greater proportion of medical and pharmacy students had a high knowledge score than law students (table 1). Established students of pharmacy and medicine more frequently scored higher on the knowledge scale than their novice counterparts; this was not true for law students.

Personal use of psychoactive substances. A series of questions assessed the personal lifetime use of a number of psychoactive substances. Personal experience with psychoactive substances was common. Alcohol was the most frequently used substance; 45 percent or 707 of 1,578 students used it at least once a week. The use of other psychoactive substances without medical advice also was common. A total of 606 or 38 percent of 1,578 students had used psychoactive substances, other than alcohol, at least once without medical advice.

Legal control. There was considerable variation in the legal control deemed appropriate for the sale of individual agents, but the pattern was similar for all drugs except heroin and marijuana. Current controls for barbiturates, tranquilizers, morphine, amphetamines, LSD (lysergic acid diethylamide), and alcohol were generally supported (table 2). Support was most frequent among pharmacy students and least among law students. Sup-

port for current measures tended to be greater among the established students within each group.

Most medical and law students opposed the current absolute prohibition of marijuana, while most pharmacy students supported prohibition (table 3). Among students of law and medicine

who favored less stringent control, the majority strongly favored free accessibility of marijuana. Students of pharmacy who favored less stringent controls were equally divided between freely available marijuana and medically supervised marijuana, with approximately 15 percent in each category. More than half of

Table 4. Student attitudes concerning current control of marijuana and heroin

Scale	Number	Percent favor change in marijuana control	Percent favor change in heroin control
Religious beliefs:¹			
Nontraditional.....	568	77.9	58.2
Traditional.....	1,016	53.6	47.7
Marijuana use:²			
Ever.....	344	90.7	64.1
Never.....	1,234	54.5	48.1
Knowledge:¹			
High.....	84	76.2	55.3
Moderate.....	908	66.6	54.1
Low.....	592	53.9	47.1

¹ 2 nonrespondents.

² 8 nonrespondents.

Table 5. Student attitudes concerning current control of marijuana and heroin, by traditionality, profession, and use of marijuana

Profession and use of marijuana	Number	Percent favor change in marijuana control	Percent favor change in heroin control
<i>Traditional</i>			
Pharmacy.....	.....	29.2	33.6
Ever.....	4	100.0	25.0
Never.....	267	28.1	33.7
Medicine ¹.....	.....	60.1	56.4
Ever.....	44	84.4	66.6
Never.....	307	56.7	55.0
Law ².....	.....	64.6	49.6
Ever.....	78	85.9	56.4
Never.....	315	59.4	47.9
<i>Nontraditional</i>			
Pharmacy.....	.....	35.2	37.0
Ever.....	13	76.9	53.8
Never.....	41	22.0	31.7
Medicines.....	.....	82.9	63.1
Ever.....	120	93.3	70.0
Never.....	167	75.6	58.3
Law ¹.....	.....	85.6	57.2
Ever.....	85	95.3	64.7
Never.....	137	73.7	52.6

¹ 2 nonrespondents. ² 1 nonrespondent. ³ 3 nonrespondents.

all the novice students of law and medicine and only slightly less than half of the established students in these groups favored free accessibility. In the pharmacy group, the majority at both levels favored current controls.

Most pharmacy students supported current laws for the control of heroin, with the strongest support among established students. Medical students most frequently supported medically supervised access, with the strongest support among established students. Law students were equally divided between current measures and medically supervised access; there was no difference within this group.

When traditionalism was assessed by the religious beliefs scale (table 4), the proportion favoring a change of current laws controlling the distribution of both marijuana and heroin was greater in the nontraditional group. Students who reported personal experience with marijuana were less in favor of current controls than students who reported that they had never used the substance. There was a direct relationship between knowledge and the proportion of students favoring less stringent control of marijuana. A similar relationship between knowledge and the control of heroin was apparent at the high and low levels of knowledge.

Most students of medicine and law favored change in the current control of marijuana and heroin, whereas most pharmacy students favored current controls (table 3). This difference of opinion was not explained by the greater proportion of traditional students in pharmacy since a minimal difference between traditional and nontraditional students existed in that group (table 5). Personal

Table 6. Student attitudes concerning current control of marijuana and heroin, by profession and knowledge

Profession and knowledge	Number	Percent favor change in marijuana control	Percent favor change in heroin control
Pharmacy:			
High.....	25	52.0	32.0
Medium.....	146	30.1	33.6
Low.....	154	26.6	35.1
Medicine:¹			
High.....	50	86.0	66.7
Medium.....	414	70.8	62.3
Low.....	177	65.0	51.4
Law:			
High.....	9	88.9	55.6
Medium.....	348	77.0	52.9
Low.....	261	62.5	51.3

¹ 2 nonrespondents.

experience with marijuana partially explained the difference between pharmacy students and the other two professional groups.

In each professional group, favoring change in the current control of marijuana was directly related to knowledge (table 6). Only in the medical group was a similar relationship noted for the control of heroin.

Discussion

The professional students in this survey were a selected group, but their attitudes represented points on the continuum of attitudes of professional students throughout the country. The cross-sectional design of this study permitted examination of differences between professional groups at one point in time.

Such differences may be the result of selection factors or the process of professional socialization. Differences that exist within a professional group are more difficult to interpret and are probably the result of interaction between the effects of professional training, a cohort effect, and other adaptive effects that usually accompany the process of aging. A longitudinal design is

necessary to separate these factors.

A similar gradient between professional groups is seen on each punitive scale. This existed at both novice and established levels of training and was most likely related to selective entry into a profession. It is consistent with the hypothesis of Eron and Redmount (6), which holds that students selecting a career in law are more cynical and less humanitarian than those electing a career in medicine. In addition, the tendency that Eron noted (7) for differences to disappear during the training period was apparent in our study. This design did not permit assessment of the influence of selective attrition upon changes in the proportions over time, but it is thought to be a less likely determinant.

The general punitive scale was derived from a more extensive scale that Blum (8) used to study a group of 24 law enforcement officers in California during the early 1960's. When these data were transposed to the scoring system used in our study, the enforcement officers most closely resembled the pharmacy students.

The difference between the number of persons classified as low punitive on the user scale compared with either the general or seller scales was striking. It was interesting to note that the proportion of pharmacy students regarded as low punitive toward users resembled the distribution in medicine and law only at the established student level. This observation is consistent with a medically oriented system of control, which does not view the user as a criminal to be severely punished for his transgression. In such a system, legal penalties are directed against the sale of prescribed substances, while use of these substances is considered a social and medical problem to be controlled through rehabilitative methods. The trend away from the legal-punitive system of control in the United States to a more medically oriented approach has been slow.

The professional students surveyed will play important roles in determining the legal controls of the future. It seems reasonable to expect that the trend will be strengthened and that change will be more rapid when these students assume their future professional roles.

The test of knowledge reflected the effects of specific technical education. The great proportion of established students with high knowledge among pharmacy and medical students was not found among established law students.

The question of appropriate controls for the sale of marijuana has generated a great deal of discussion in recent years. Many aspects of the problem are set out in a statement by the American Medical Association's Council on Mental Health (9). Most students surveyed favored less strin-

gent controls. Profession, traditionality, personal experience with marijuana, and knowledge were strongly associated with opinions concerning the control of marijuana.

The considerable interaction between these variables was apparent in the relationship between personal experience with marijuana and traditionality of religious beliefs. Students of medicine and law differed markedly from students of pharmacy. The difference was not fully explained by the other variables, and factors of selection and professional socialization remained important among the pharmacy students. The response to questions on religious beliefs was associated, as one might expect, with traditional students, who were more favorable to current controls than their nontraditional counterparts.

The relationship between knowledge and sentiment for change was present in each professional group. It seems clear that the students who were aware of the complex issues involved were not satisfied with the current solutions to the control of marijuana. The substantial feeling for change among students who had used marijuana may have reflected a small incidence of adverse effects experienced with the low potency preparations generally available in the United States. This factor may have been influential among pharmacy students where personal use of marijuana appeared to negate the strong influence of selection and professional socialization.

It is impossible to know if the sentiment for change found among medical and law students will persist beyond the training period. Keup (10) surveyed a group of Brooklyn, N.Y., psychi-

atrists in 1969 and found that 30 percent of those in private practice and 17 percent of the hospital-based psychiatrists favored legalization of marijuana. A group of young lawyers in Canada, asked to judge a debate on the subject of legalization of marijuana, was equally divided on the merits of the case presented (11). It seems likely that many students will carry these attitudes into the practice of their profession. Since these students represented a somewhat traditional segment, it is unlikely that they overstated the sentiment for change that exists among professional students currently being educated in the United States.

The number of students shown to favor change may be inflated or deflated by the results of present research efforts. Despite the current lack of detailed knowledge of the effects of marijuana, many students favor legalization.

Profession, traditionalism, and personal use of marijuana are associated with opinions concerning the control of heroin. A high proportion of medical students favored medically controlled access to heroin similar to the control in England, where all physicians can prescribe heroin for a short period and specially licensed physicians can prescribe it for a long period. The division within the group of medical students reflected conflicting reports of English experience reported in the medical literature. Only in this group was a relationship found between knowledge and opinion concerning control. Associations between control of heroin and traditionalism and personal use of marijuana followed the trends noted for the control of marijuana, but were not as strong.

The attitudes of the students surveyed indicated acceptance of

current legal controls of psychoactive drugs, with three exceptions. A large number of students preferred medically controlled heroin rather than the current absolute prohibition in the United States. A large majority disapproved the current control of marijuana. And there was strong support for a medical-social approach to problems of psychoactive drug control, rejecting a punitive approach to the control of drug use.

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BURKE, WILLIAM M. (University of Kentucky Medical Center), and MARX, MARTIN B.: *Attitudes of professional students toward legal control of psychoactive substances. HSMHA Health Reports, Vo. 86, August 1971, pp. 725-732.*

A group of pharmacy, medical, and law students at three universities in the Ohio River Valley were surveyed during the spring and fall of 1969 regarding their attitudes toward the control of psychoactive substances. Responses were obtained from 1,586 or 84.3 percent of the group.

The majority of students agreed with the current control of most psychoactive substances, but many favored a change in the legal control of

marijuana (62.4 percent) and heroin (51.6 percent). Students favoring change in the current control of these substances tended to be less traditional in their religious beliefs, had more knowledge concerning psychoactive substances, and had at least one prior experience with the use of marijuana. There was strong rejection of a punitive approach toward controlling the use of psychoactive substances.