

Report on a Pilot Project Investigating the Psychopharmacological  
Effects of Psilocybin in Normal Volunteers

During the year 1965-1966, we have been studying the experimental drug Psilocybin in the Psychopharmacology Research Laboratory of the Massachusetts Mental Health Center under the supervision of Dr. Jack Ewalt, Superintendent and Dr. Alberto DiMascio, director of the laboratory. Our primary aims have been three-fold: 1. to determine the most useful psychoactive control substance for use with Psilocybin, 2. to ascertain the feasibility of a double-blind experimental procedure with Psilocybin and an active control substance, and 3. to determine the most suitable route of drug administration.

Under double-blind conditions, forty subjects in groups of four have received a relatively high dose of Psilocybin (30 or 40 mg.) compared to a psychoactive control substance of 9 to 12 mg. of Psilocybin or a combination of 20 mg. dextro-amphetamine plus 130 mg. amobarbital (Dexamyl). At least one and usually two subjects in each experimental group of four received the high dose of Psilocybin. Both oral and intramuscular routes of administration have been used for Psilocybin. The subjects fell into the following categories according to drug, dosage, and route:

<u>Drug</u>	<u>Dosage</u>	<u>Route</u>	<u>Number of Ss</u>
Psilocybin	40mgm	oral	4
Psilocybin	30mgm	oral	8
Psilocybin	30mgm	IM	8
Psilocybin	12mgm	IM	4
Psilocybin	9mgm	IM	4

<u>Drug</u>	<u>Dosage</u>	<u>Route</u>	<u>Number of Ss</u>
Psilocybin	10mgm	oral	4
Psilocybin	5mgm	oral	2
Dexamyl	20mgm	oral	6

In addition, 8 subjects were used a second time as follows:

Psilocybin	40mgm	oral	2
Psilocybin	30mgm	oral	1
Psilocybin	10mgm	oral	5

All subjects were between the ages of 21 and 55, had no previous experience with any hallucinogenic drug, and had no past or present history of psychiatric illness. Two hours of preparation during the preceding week were via the same standardized taped instructions for all groups followed by a brief question and answer period. Environmental setting was also constant and consisted of a six-hour program of classical music in a supportive atmosphere with psychiatric supervision provided by the experimenters. Data were collected before the drug sessions via standard psychological tests, interviews, and questionnaires; during the sessions via tape recordings and experimenter observations; and after the sessions via individual write-ups (later content-analyzed by independent judges), questionnaires, and personal interviews.

### Results:

Although final statistical confirmation is not yet available, our observations are as follows:

1. Our double-blind procedure is effective and practical. Experimenters were unable to ascertain during the drug session the nature or dose of drug administered in approximately 75 per cent of subjects and almost all the subjects were unaware of a difference in dosage.
2. Both 10 mgm of Psilocybin and 20 mgm of Dexamyl are adequate control substances which provide the subjects with some psychological experience, but which do not induce a peak psychedelic experience as with 30 or 40 mgm of Psilocybin. Then differences were shown only after the experience by analysis of questionnaires and individual written accounts.
3. Our data suggests no marked difference between Dexamyl and 10 mg of oral Psilocybin as a control substance, but not enough subjects were able to be run to insure statistical validity to this conclusion.
4. The 5 mg dose of Psilocybin is not an adequate control substance because the experience produced is so minimal that during the sessions both the experimenters and subjects could distinguish such reactions from those produced by a high dose of Psilocybin.
5. Psilocybin, 9 or 12 mgm, administered intra-muscularly is an inadequate control substance because the reaction

produced is too intense when compared with that produced by 30 mgm of Psilocybin administered intramuscularly.

6. The intramuscular route for administering Psilocybin has two advantages:

a. onset of action is within 5 minutes rather than 30-60 compared to oral Psilocybin and the intensity of the reaction reaches a peak within one hour.

b. the duration of action is approximately one hour less than with a comparable dose of oral Psilocybin.

7. Our procedure is safe. No subject had any lasting untoward effect requiring either hospitalization, or follow-up therapy. Chlorpromazine (25 mg) was administered as an antidote to only one subject, and that only as an added safety precaution in the late stages of his experience to insure what we considered an adequate return to normal, so the subject could go home when the experiment ended.

Data is currently being analyzed to examine any correlation between personality profile (as measured by the MMPI, the Shor Personal Experience Questionnaire, the Marlowe-Crowne Social Desirability Scale, and the Cohen Tolerance of Ambiguity Scale) and type of experience with Psilocybin. Our statistics may be inadequate for this purpose, however, because we had not concluded

our experimental series before permission to use Psilocybin was withdrawn. Finally a follow-up study is in progress to investigate the nature of any lasting effects of Psilocybin in our subjects.

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Walter N. Pahnke, M.D., Ph.D.  
Principal Investigator

Carl Salzman, M.D.  
Co-investigator

Richard Katz, Ph.D.  
Co-investigator