

Psilocybin-Induced Mystical Experience is Associated with Less Heavy Drinking in Patients with Alcohol Use Disorder

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Methodological Issue: Is the presence of subjective psychedelic experience relevant in the treatment of alcohol use disorder using psilocybin?

If it is relevant, can it serve as a marker of treatment efficacy?

Overview of Trial: NCT02061293: double-blind, randomized, parallel-group study
Psilocybin vs. Benadryl, 2 medication sessions, 12 therapy sessions
Subjective Measures: MEQ, M-Scale, ASC, HRS
Primary Outcome: Post-treatment heavy drinking tracked for 6 months

Methods: PCA Analysis of the Subjective Experience Scales

Multiple Linear Regression between PCA components and heavy drinking, controlling for baseline heavy drinking

PCA Analysis

COMPONENT	1	2	3	4
EIGENVALUE	11.98	3.61	1.77	1.35
% VARIANCE EXPLAINED	49.92%	15.02%	7.36%	5.63%
LOADING INTERPRETATION	Mystical Experience 1	Sensory Physical Change	Mystical Experience 2	Challenging Experience
MEQ-30				
Mystical	0.828	0.204	0.378	0.001
Positive Mood	0.825	0.292	0.235	-0.142
Time & Space	0.526	0.408	0.309	0.504
Ineffability	0.341	0.036	0.567	0.403
M-Scale				
Introverted	0.324	0.141	0.876	0.067
Extroverted	0.375	0.180	0.758	-0.134
Interpretation	0.529	0.159	0.769	-0.155
11D-ASC				
Experience of Unity	0.811	0.326	0.315	0.071
Spiritual Experience	0.824	0.192	0.258	0.210
Blissful State	0.826	0.296	0.187	-0.171
Insightfulness	0.803	0.226	0.339	0.047
Disembodiment	0.443	0.709	-0.128	0.220
Impaired Control & Cognition	0.033	0.250	-0.088	0.876
Anxiety	0.036	0.226	-0.117	0.863
Complex Imagery	0.410	0.646	0.233	-0.018
Elementary Imagery	0.083	0.799	0.398	0.160
Audio-Visual Synesthesia	0.223	0.764	0.111	0.148
Changed Meaning of Precepts	0.517	0.279	0.131	0.490
HRS				
Intensity	0.137	0.538	0.528	0.245
Somaesthesia	0.276	0.769	-0.062	0.249
Affect	0.739	0.470	0.163	0.246
Perception	0.217	0.727	0.260	0.278
Cognition	0.448	0.659	0.156	0.421
Volition	-0.341	0.186	0.291	0.706

Thank You!

Dr. Tanya Ramey & Dr. Atul Mahableshwarkar

Multiple Linear Regression

Model Summary	R^2		Adjusted R^2		SEE		$F_{(df)}$	p	
	0.26		0.18		20.66		3.00 (5, 42)	0.02	
Predictor	B	SE	β	t	p	95% CI for B	r zero-order	r partial	r part
Mystical Experience 1	-7.11	3.10	-0.31	-2.29	0.03	[-13.37, -0.85]	-0.37	-0.33	-0.30
Sensory Physical Experience	2.10	3.03	0.09	0.69	0.49	[-4.00, 8.21]	0.11	0.11	0.09
Mystical Experience 2	-4.27	3.03	-0.19	-1.41	0.17	[-10.38, 1.84]	-0.21	-0.21	-0.19
Challenging Experience	-3.57	3.03	-0.16	-1.18	0.25	[-9.69, 2.54]	-0.13	-0.18	-0.16
Baseline Heavy Drinking	0.21	0.12	0.24	1.73	0.09	[-0.04, 0.45]	0.32	0.26	0.23

Conclusions

- Therapeutic benefit is associated with a specific drug effect - mystical experience, and not the intensity or general drug effects.
- Mystical experience (positive mood, changes in time & space, experience of unity, spiritual experience, insight, changed meaning of precepts), may serve as an efficacy marker in psychedelic drug development, especially if replicated in an independent sample.
- The 30-item MEQ may be the most time-efficient rating scale for capturing this efficacy signal, with minimal participant burden.