

# The influence of set and setting on the acute subjective effects of 5-MeO-DMT

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## INTRODUCTION

5-Methoxy-N, N-dimethyltryptamine (5-MeO-DMT) is a psychoactive indolealkylamine substance found in several plants and in high concentrations in Bufo alvarius toad venom/bufotoxin. 5-MeO-DMT is also synthetically produced and elicits strong hallucinogenic effects with a rapid onset and a short duration of action.

5-MeO-DMT has been used in various contexts including recreational (e.g., at home, at music festivals) and sacramental (e.g., shamanic rituals) settings.<sup>2,3</sup>

Research has shown that the set and setting of a psychedelic experience are critical factors associated with acute effects.<sup>1,4,5,6</sup> Anecdotal evidence suggests the same may be true for 5-MeO-DMT; however, we could find no empirical support for this assertion.

Therefore, we sought to examine the influence of set and setting on the acute and persisting effects of 5-MeO-DMT.

## PRIMARY AIM

The aim of the current study is to examine the influence of set and setting on the subjective effects of synthetic 5-MeO-DMT by comparing individuals that have used 5-MeO-DMT 1) in the general population and 2) in a structured group setting in the Western US.

## METHOD

Using internet-based advertisements we recruited two samples of English-speaking adults to complete an anonymous web-based survey. Sample 1 included anyone reporting synthetic 5-MeO-DMT use in their lifetime. Sample two included members of a specific underground group who used 5-MeO-DMT in a structured setting in the US. This group guides the dose and administration of 5-MeO-DMT, and the preparation of and support during/following sessions, which are similar to procedures used in laboratory studies with psychedelics. Measures included frequency of use, mystical experiences, challenging experiences, persisting effects, set and setting variables.

## RESULTS

## DATA ANALYSES

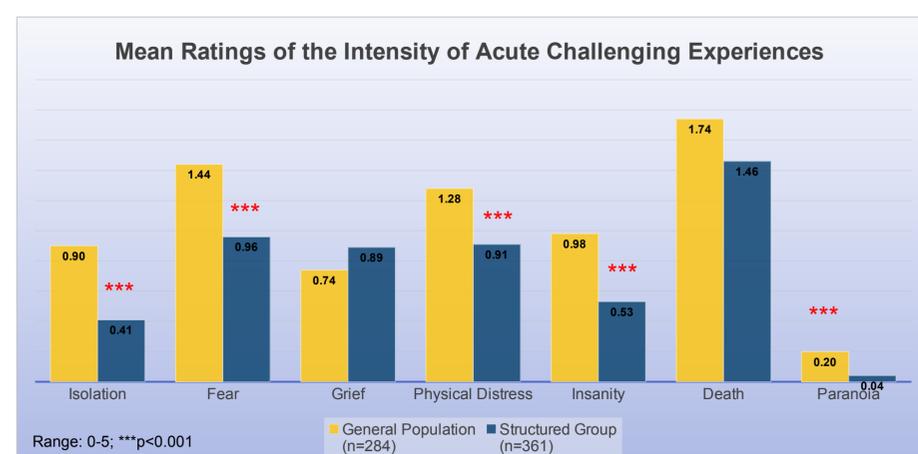
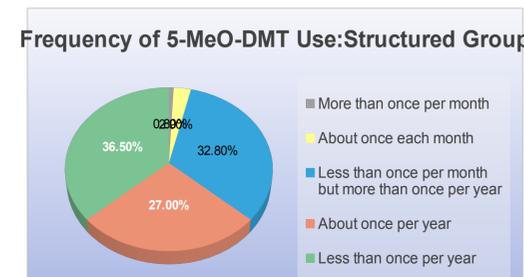
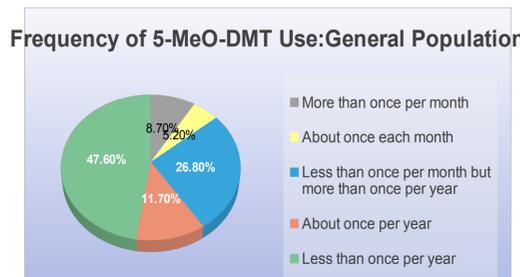
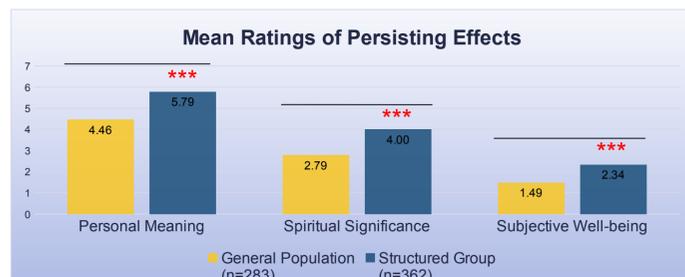
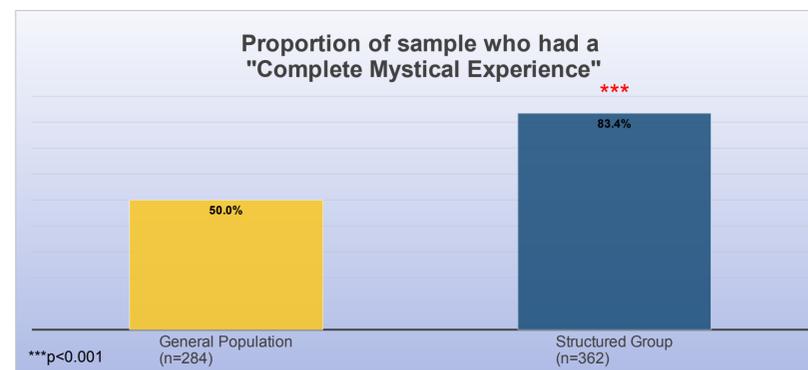
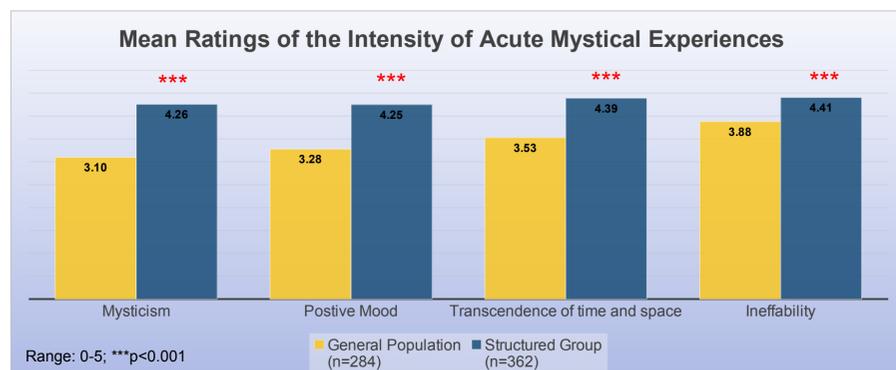
We conducted frequency counts and descriptive analyses of all study variables. Next, we compared proportions of sample endorsing variables using chi-square analyses and compared mean ratings of subjective effects of 5-MeO-DMT using t-tests.

## SAMPLE

A total of 646 people completed one of the online surveys.

The subsamples were comprised as follows:  
General Population (n=284)

- Mean age = 34 (SD=12)
- Male = 88%
- White/Caucasian = 88%
- Heterosexual = 80%



	General Population (n=284)	Structured Group (n=362)	$\chi^2$ statistic	Effect Size ( $\eta^2$ )
<b>Harm Reduction Techniques</b>				
Focus on Intentions	61.3%	88.1%	63.495***	0.31
Shamanic Techniques	25.0%	81.8%	209.024***	0.57
Safe Space	36.4%	48.9%	2.622	0.06
Prepare Session Music	21.4%	37.6%	22.599***	0.19
Prepare Comfortable Place	89.4%	85.6%	2.075	0.06
Limit Distractions	34.1%	46.9%	4.016	0.08
Use of a Guide	8.5%	49.2%	305.847***	0.69
Use with Friends	24.1%	36.8%	7.826**	0.11
Trusted Source	32.0%	51.4%	40.811***	0.25
Meditate	34.2%	55.8%	29.993***	0.22
Abstain from Sex	2.9%	8.4%	10.746**	0.13
Abstain from Alcohol/Drugs	18.6%	38.5%	45.736***	0.27
Integrate with Friend	40.5%	69.9%	56.100***	0.30
Write about Session	12.70%	24.30%	14.349***	0.15

Table. Proportion of respondents within the General Population and the Structured Group who employed various techniques to enhance the set and setting of the experience. The difference between groups was tested using a two-tailed t-test in which Levene's Test for Equality of Variances was performed. Effect sizes of between group differences in MEQ scores were calculated. All items were scored on a Likert scale 0-5. \*p<0.05; \*\*p<0.01; \*\*\*p<0.001 Note: Cohen's d was calculated to estimate effect size and is interpreted as 0.2=small, 0.5=medium, 0.8=large

## SUMMARY & LIMITATIONS

Findings suggest that 5-MeO-DMT has the capacity to occasion mystical experiences in users, and to a significantly higher intensity when administered with strategies to enhance the set and setting of the experience.

Furthermore, individuals who used 5-MeO-DMT in a structured group setting experienced less intense challenging experiences while under acute drug effects, and reported more intense personal meaning, spiritual significance and improved subjective well-being to their 5-MeO-DMT experience compared to those who were not administered 5-MeO-DMT in a structured group. Respondents in the structured group reported using 5-MeO-DMT less frequently than those in the general population group.

This study is limited by the cross-sectional design, self-report and volunteer biases, and lack of assessment of dose-related or expectancy effects.

## CONCLUSIONS

Similar to other psychedelics, set and setting appear to be critical factors associated with positive acute subjective effects of 5-MeO-DMT. Future research should employ rigorous controlled and longitudinal designs to further clarify the influence of set and setting on the experience of 5-MeO-DMT in order to better understand the acute and long-term effects associated with 5-MeO-DMT.

## REFERENCES

1. Carhart-Harris, R. L., Roseman, L., Haijen, E., Erritzoe, D., Watts, R., Branchi, I., & Kaelen, M. (2018). Psychedelics and the essential importance of context. *Journal of Psychopharmacology*, 1-7.
2. Davis, A. K., Barsuglia, J. P., Lancelotta, R., Grant, R. M., & Renn, E. (2018). The epidemiology of 5-methoxy-N, N-dimethyltryptamine (5-MeO-DMT) use: Benefits, consequences, patterns of use, subjective effects, and reasons for consumption. *Journal of Psychopharmacology*, 00, 1-14.
3. Davis, A.K., So, S., Lancelotta, R., Barsuglia, J.P., & Griffiths, R.R. (unpublished manuscript). 5-methoxy-N, N-dimethyltryptamine (5-MeO-DMT) used in a naturalistic setting is associated with subjective improvements in depression and anxiety.
4. Griffiths, R.R., Richards, W.A., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical experiences having substantial and sustained personal meaning and spiritual significance. *Journal of Psychopharmacology*, 187, 268-283.
5. Griffiths R.R., Johnson, M.W., Carducci, M.A., Umbricht, A., Richards, W.A., Richards, B.D., Cosimano, M.P., Klinedinst, M.A. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial. *Journal of Psychopharmacology*, 30(12), 1181-1197.
6. Johnson, M.W., Richards, W.A., & Griffiths, R.R. (2008). Human hallucinogen research: Guidelines for safety. *Journal of Psychopharmacology*, 22, 603-620.

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## DISCLOSURE

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