

# The effects of supplements as an effective harm reduction strategy post ingestion of 3,4-methylenedioxyamphetamine (MDMA)

Project ID: 792

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## Background

- 3,4-Methylenedioxyamphetamine (MDMA), first created in 1912, became one of the many drugs of choice within the electronic dance music (EDM) community.
- Banned in 1985, the drug's use has increased exponentially (300%) since the 1990s.
- Although clinical trials of the substance are being conducted as an adjunct psychotherapy to manage post-traumatic stress disorder and anxiety, it has diffused into various youth networks, urban neighborhoods, and the general population.
- Main effect: depletion of serotonin responsible for its adverse psychiatric effects such as: depression, paranoia, insomnia.
- Many users have resorted to using over-the-counter supplements to mitigate adverse effects.

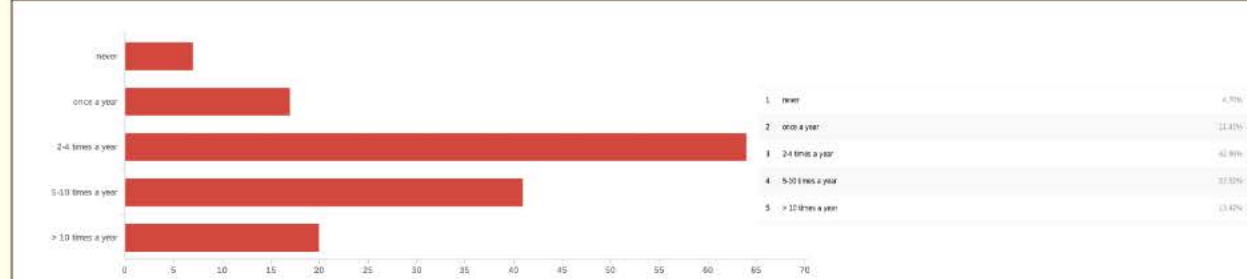
## Objectives

- To assess how/what prevalent certain practices are in regard to managing the comedown effects of MDMA ingestion/intake and what the practices are.
- From a descriptive standpoint, determine whether or not over the counter supplements aid in MDMA hangovers
- Assess the prevalence of MDMA use in community settings and their purpose.

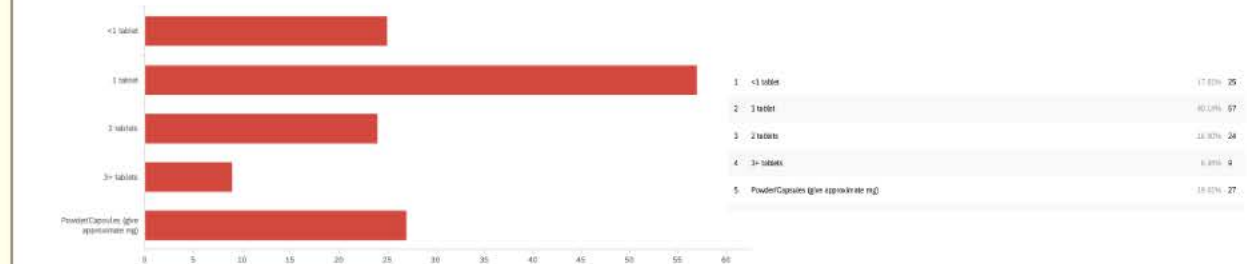
## Methods

- Anonymous online survey using Qualtrics
- Sample size: 150
- Inclusion criteria: 18+ years, festival attendee; will also ask if they have partaken/partake in MDMA consumption in other scenarios (will indicate where they have used the substance)
- Exclusion criteria: Individuals who do not fill out sufficient data in the survey form, specifically those that are "required."

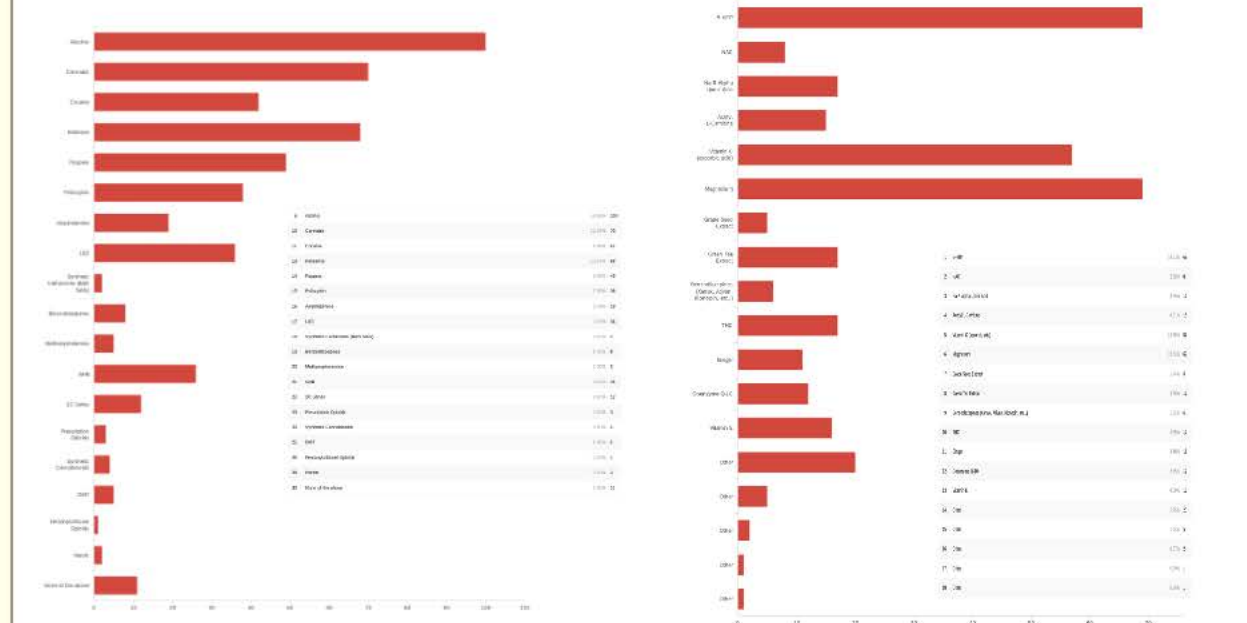
## Results



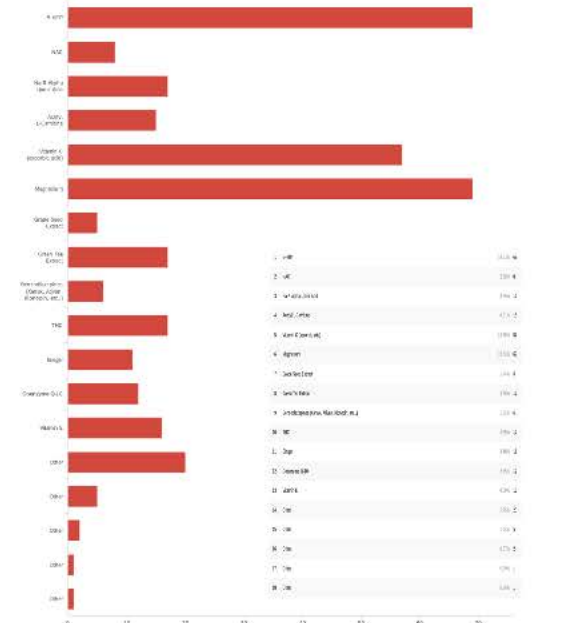
Graph 1: Frequency of MDMA consumption



Graph 2: Amount of MDMA used in one day



Graph 3: Substances taken along with MDMA



Graph 4: Supplements used post-MDMA

## Conclusion

- Those who reported taking supplements (66.90%) noted 5-HTP, Vitamin C, and Magnesium as the most consumed, overall, with 5-HTP, Grape Seed Extract, and Green Tea Extract used post MDMA and Ginger, Magnesium, and NAC (N-Acetyl Cysteine), used prior to MDMA. 5-HTP (29.03%) and Magnesium (46.43%) were perceived to be the greatest contributors to recovery with 72.63% of individuals stating feeling better within 24-48 hours. When comparing recovery time, 74.47% of participants reported that there was a significant benefit with use of supplements.

## Discussion/Limitations

- The findings from this survey provides insight into the use patterns of supplements and people's perceived benefits/risks.
- Biggest limitation of this study was understanding the purity of MDMA used by participants.
- Uncontrollable factors may contribute to study such as diet, genetics, weights, over-representation of gender and sexual minorities in festivals.
- In regard to demographics, we cannot establish a cause and effect relationship as this is a descriptive study so only a generalization can be made with observed patterns.

## References

- NIDA. What is the history of MDMA?. National Institute on Drug Abuse website. <https://nida.nih.gov/publications/research-reports/mdma-ecstasy-abuse/what-is-the-history-of-mdma>. April 13, 2021 Accessed October 3, 2023.
- Bendau A, Viol H, Petzold MB, et al. No party, no drugs? Use of stimulants, dissociative drugs, and GHB/GBL during the early COVID-19 pandemic. *Int J Drug Policy*. 2022;102:103582. doi:10.1016/j.drugpo.2022.103582
- Palamar JJ. Diffusion of Ecstasy in the Electronic Dance Music Scene. *Subst Use Misuse*. 2020;55(13):2243-2250. doi:10.1080/10826084.2020.1799231
- El-Mallakh RS, Abraham HD. MDMA (Ecstasy). *Ann Clin Psychiatry*. 2007;19(1):45-52. doi:10.1080/10401230601163592
- Drug Fact Sheet: Ecstasy/MDMA. United States Drug Enforcement Administration. 2022. Accessed September 29 2023. <https://www.dea.gov/sites/default/files/2023-03/Ecstasy-MDMA%202022%20Drug%20Fact%20Sheet.pdf>
- NIDA. What are MDMA's effects on the brain?. National Institute on Drug Abuse website. <https://nida.nih.gov/publications/research-reports/mdma-ecstasy-abuse/what-are-mdmas-effects-on-brain>. April 13, 2021 Accessed October 3, 2023.

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