

TFM

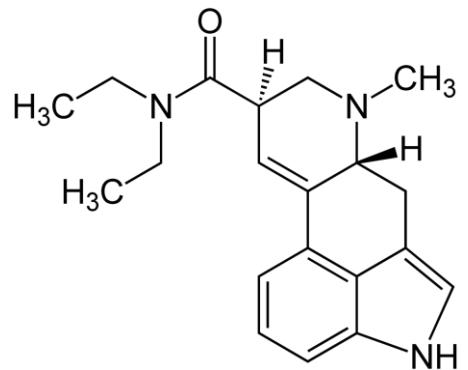
Microdosing Psychedelics: Exploratory Data Analysis

Daniel Dones Ruiz

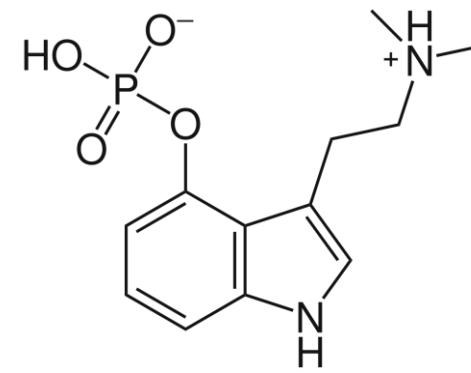
Kschool, mayo 2021



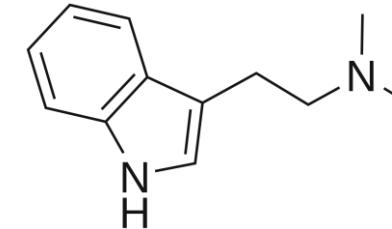
¿Psicodélicos?



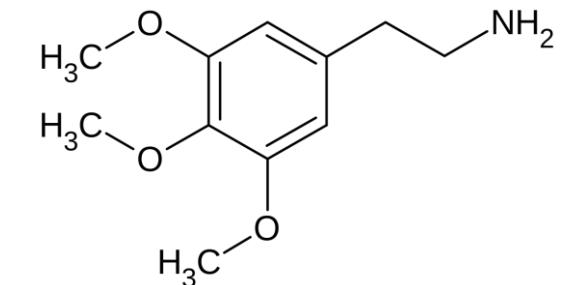
LSD



Psilocibina



DMT



Mescalina



¿Qué?



Son los psicofármacos más antiguos que se conocen

Antiguas culturas lo empleaban durante ceremonias, rituales y eventos importantes (Mesoamérica, India, Siberia, etc.)

Inducen estados alterados de conciencia (experiencia psicodélica o “viaje”)

NO genera dependencia
(Nichols, 2016)

NO se han registrado muertes
(Brunton et al., 2011)

Toxicidad **muy baja**, margen de seguridad **aún por determinar**
(Jovel et al., 2016)



¿Por qué?

Las **enfermedades mentales** son uno de los problemas más serios en la actualidad

Sus tratamientos presentan una tasa de éxito relativamente baja, son costosos y deteriorantes para el paciente



Más de 1 cada 10 personas en el mundo sufre algún tipo de desorden mental (**792 millones**). Si se incluye cualquier tipo de desorden mental o abuso de sustancia, son **970 millones**.
(Ritchie & Roser, 2018)

- Depresión **264 M**
- Ansiedad **284 M**
- Trast. consumo alcohol **107 M**
- Trast. otras drogas **71 M**

¿Qué ofrecen los psicodélicos?



→ **MACRODOSING** (Viaje completo)

→ **MICRODOSING** (Pequeñas dosis)

¿Para qué?

Nuevo **resurgimiento** en 2006 con:

ORIGINAL INVESTIGATION

Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance

R. R. Griffiths • W. A. Richards • U. McCann • R. Jesse



- “Significantly, greater improvements in psychological well-being observed and more than half considered their psilocybin experience to be among the most personally meaningful experiences of their lives” (Griffiths et al., 2006).
- “After 14 months from the trial, volunteers attributed to the experience sustained positive changes in attitudes, mood, and behavior” (Griffiths et al., 2011).
- “Sustained improvements in anxiety and depression and led to decreases in cancer patients, improved spiritual wellbeing, and increased quality of life, as well as improved attitudes towards death” Ross et al. (2016).
- Significant improvements in obsessive compulsive disorder symptoms (Moreno et al., 2006) and alcohol dependence with psilocybin (Bogenschutz et al., 2015), anxiety with LSD (Gasser et al., 2014), and depression with ayahuasca (Osório et al., 2015)

Estado del arte



JOHNS HOPKINS

Center for Psychedelic &
Consciousness Research



MAPS

MULTIDISCIPLINARY ASSOCIATION
FOR PSYCHEDELIC STUDIES



THE CENTRE FOR
PSYCHEDELIC RESEARCH



Hace 1
mes

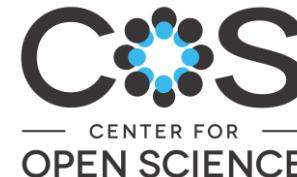


Hace 15
días

- La psilocibina parece ser, como mínimo, tan bueno como el tratamiento por excelencia para la depresión (Carhart-Harris et al., 2021)
- MDMA ha terminado la tercera fase de estudio con resultados prometedores para trastorno post-traumático, siendo seguro y bien tolerado incluso en pacientes con multiples trastornos (Mitchell et al., 2021). Está previsto su uso en 2023.

Projecto

Data



1. Revisión literatura
(Introducción, últimos resultados, estado del arte)



2. Análisis exploratorio
(Extracción, limpieza, transformación, visualización, etc.)



White-paper style



3. Análisis y discusión
(Contraste, resultados, comparación, etc.)



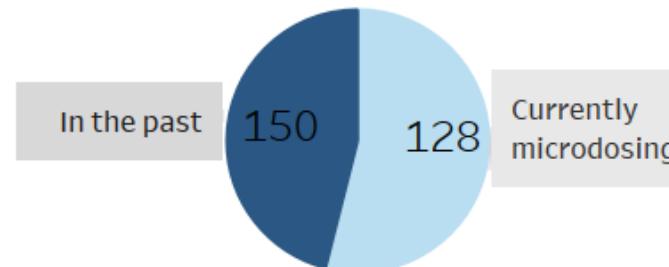
4. Redacción y conclusiones
(Documento, front-end, repo, etc.)



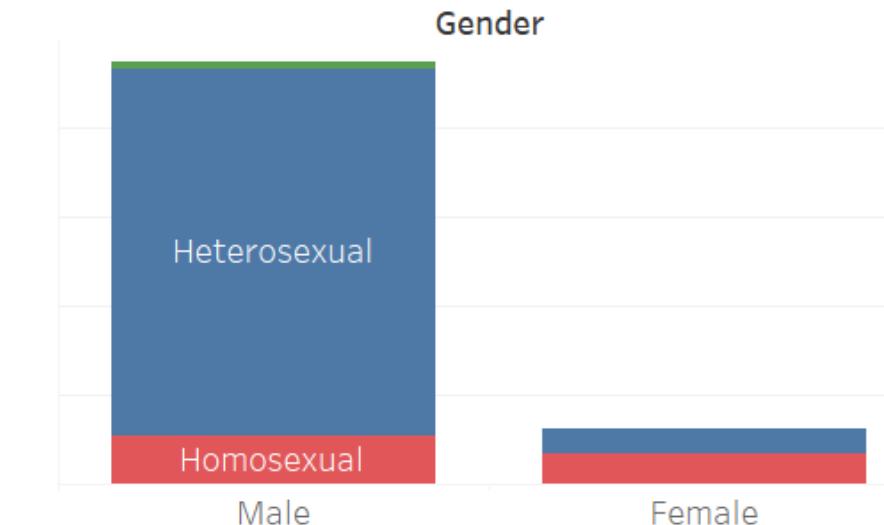


DEMOGRAFÍA DE LOS PARTICIPANTES

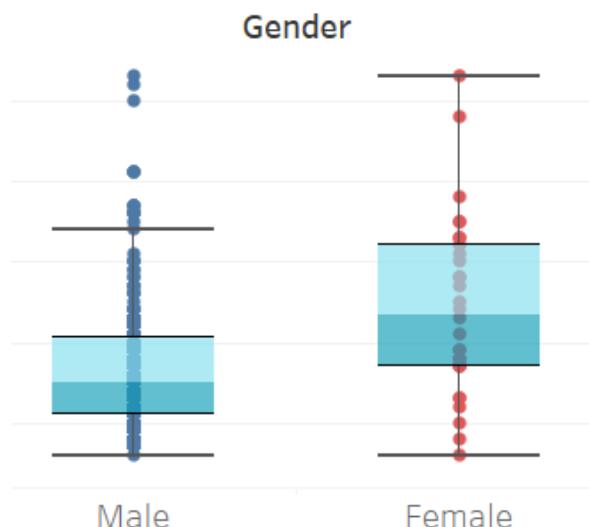
Currently microdosing



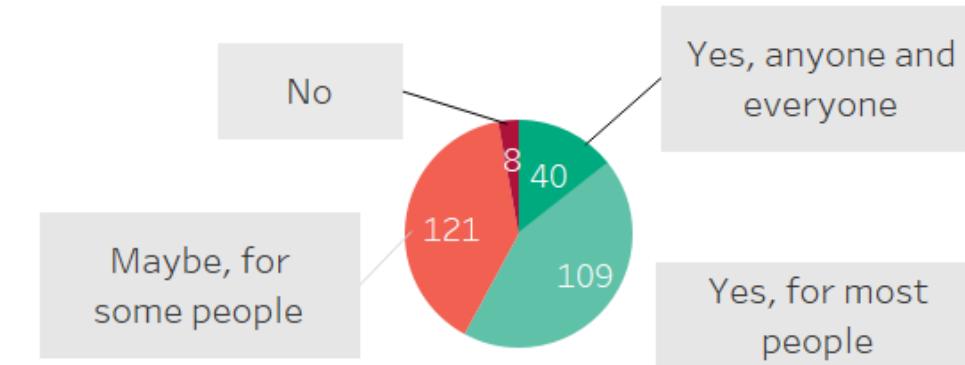
Gender and orientation



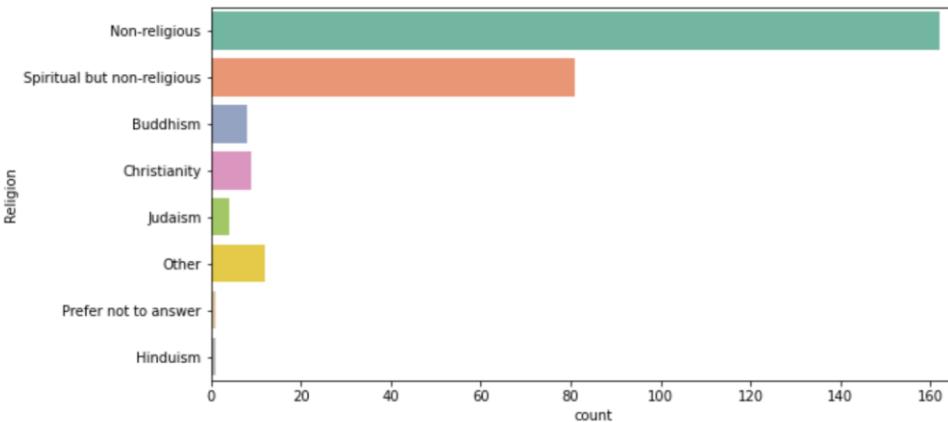
Age distribution



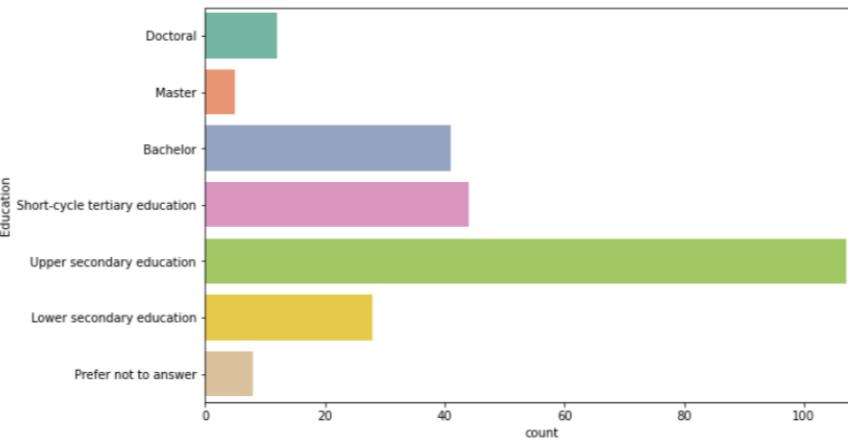
Would you recommend that others try microdosing?



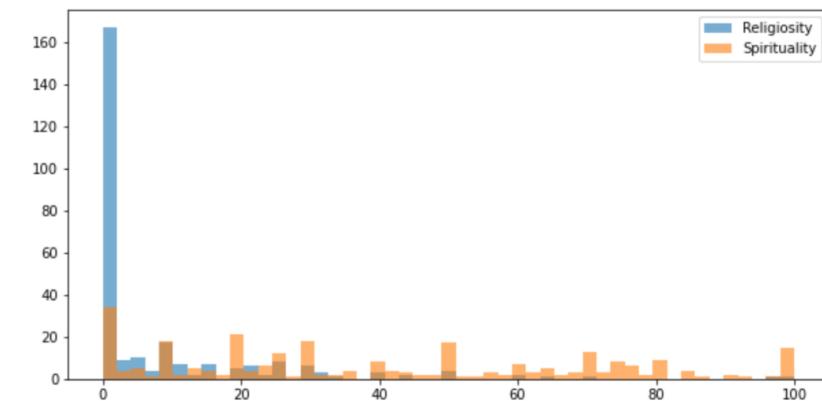
Religiosidad



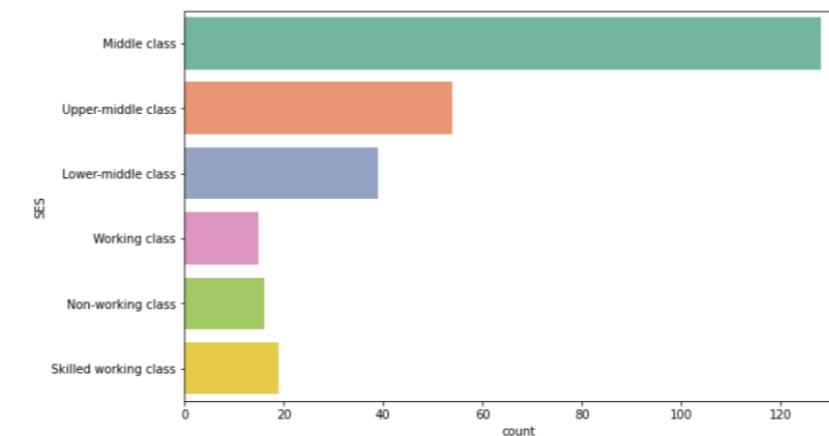
Educación



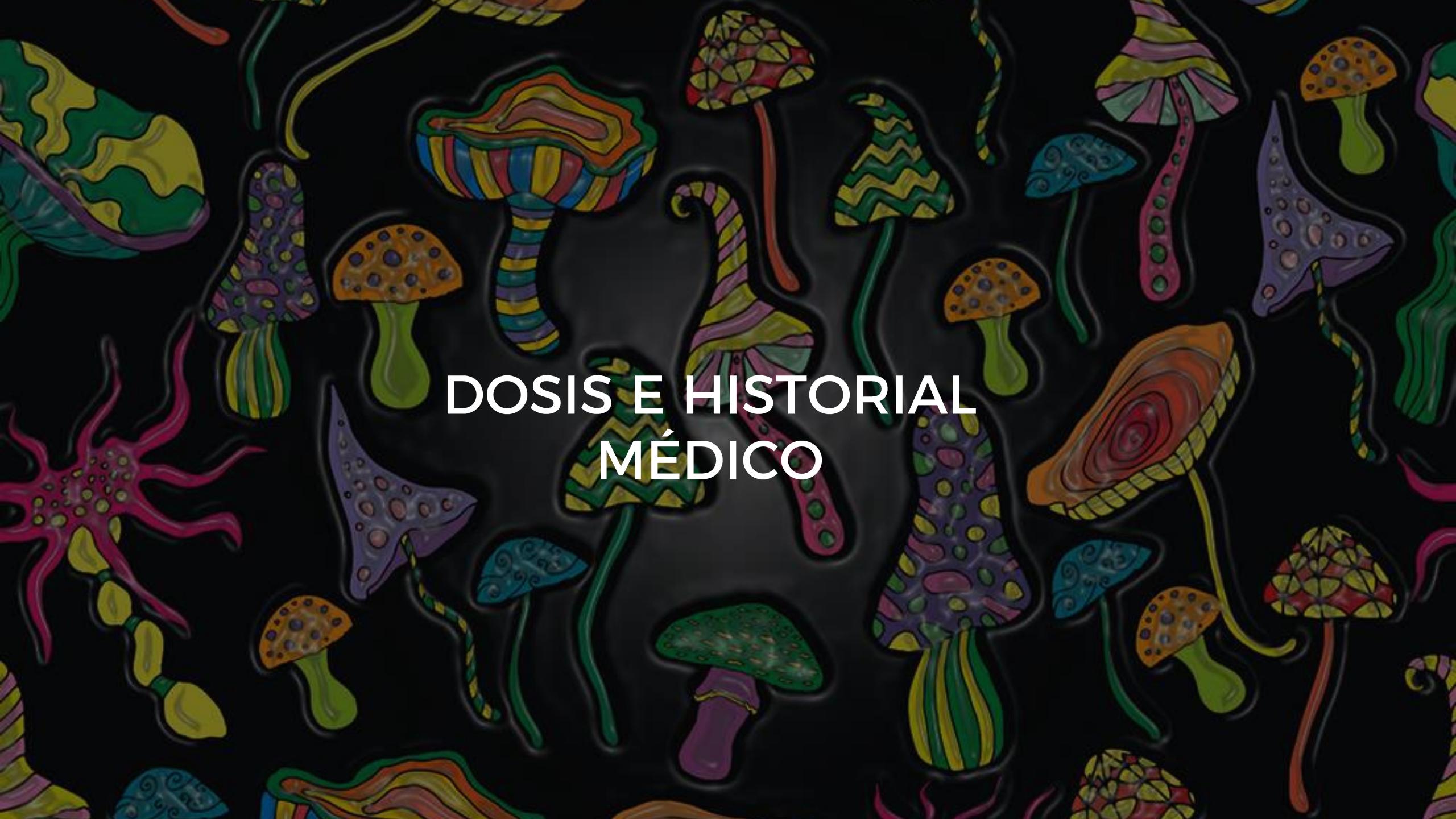
Religiosidad vs. Espiritualidad (de 0 a 100)



Clase social



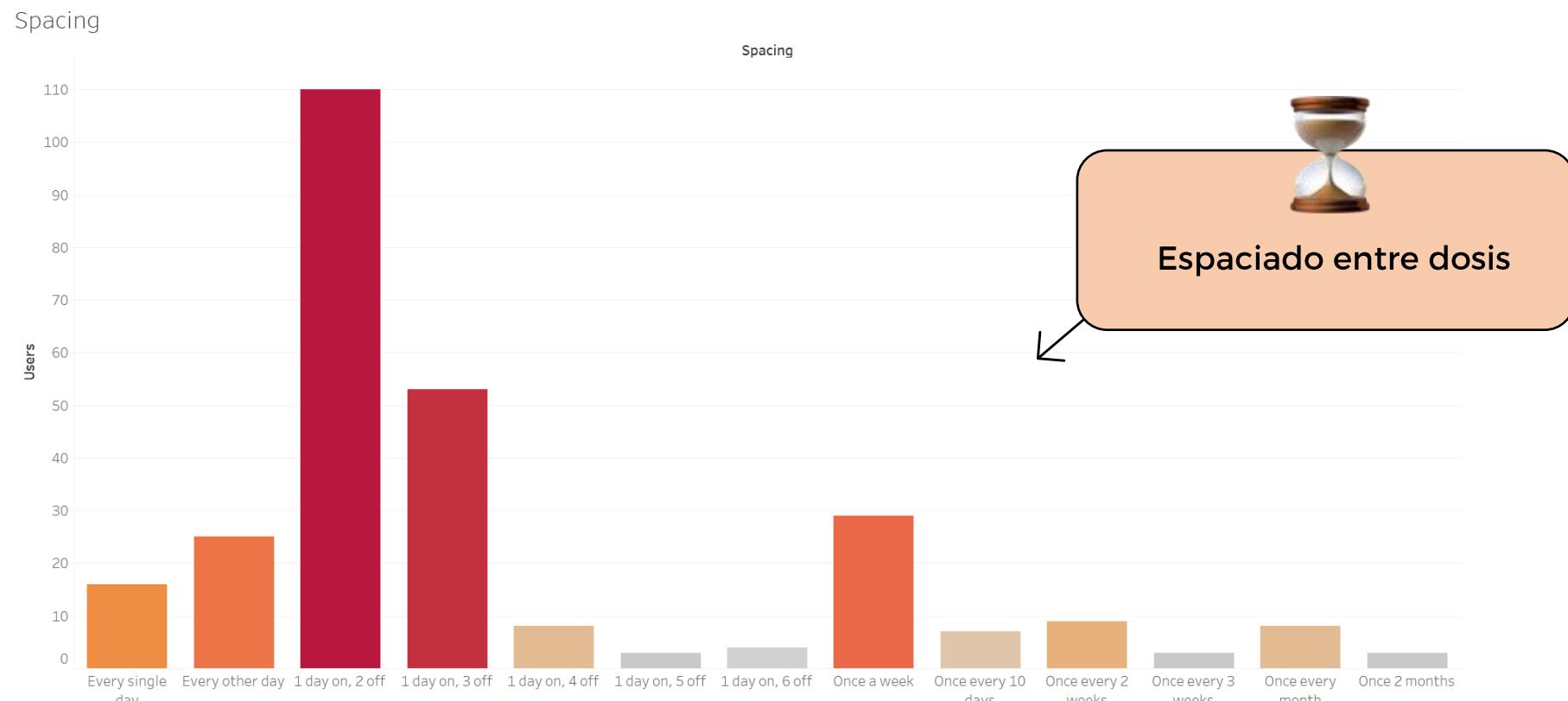
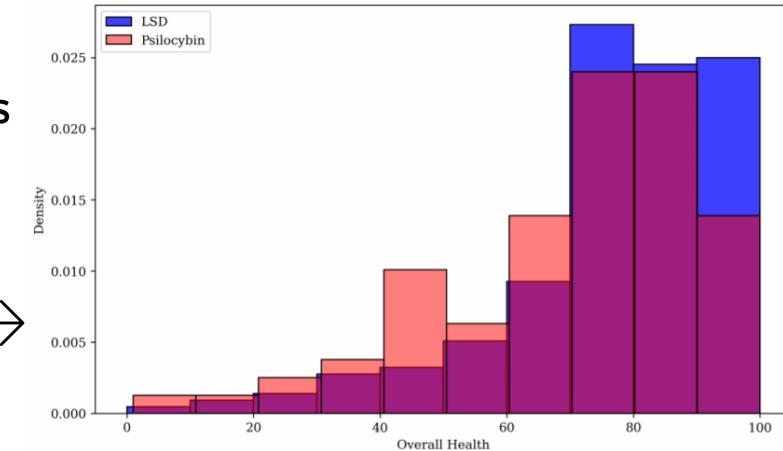
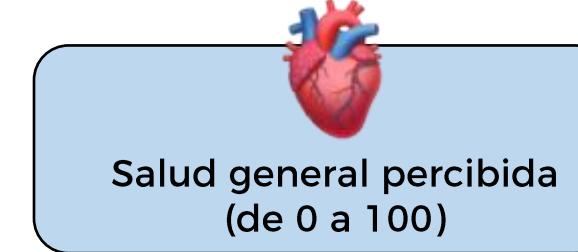
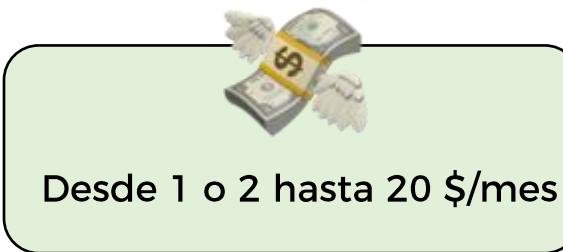
- Grupo joven, predominantemente varones sin diferencias significativas, desempeño acorde a la edad
- Destaca una mayor espiritualidad sin afiliación a ninguna religión en particular



DOSIS E HISTORIAL MÉDICO

- LSD (228 personas)
- Psilocibina (83 personas)

→ Entre 5 – 30 µgramos
→ Entre 100 – 400 µgramos



¿Recomendarías microdosing a otras personas?



SÍ 57,9 %



QUIZÁS 39,2 %



NO 2,9 %



Diagnósticos previos

Ansiedad: 73
Trastorno del estado de ánimo: 72
Déficit de atención/Hiperactividad: 54
Estrés postraumático: 17
Autismo: 9
TOC: 7
Esquizofrenia: 4
Adicción a sustancias: 3
TCA: 2
Ninguno de los mencionados: 137

- Los participantes reportaron un uso frecuente de cafeína, alcohol y cannabis, entre otras drogas.
- De aquellos que tomaban drogas de prescripción, 11 continuaron su uso durante las microdososis.
- En el notebook se describen los resultados obtenidos tras una series de test de personalidad.

BENEFICIOS



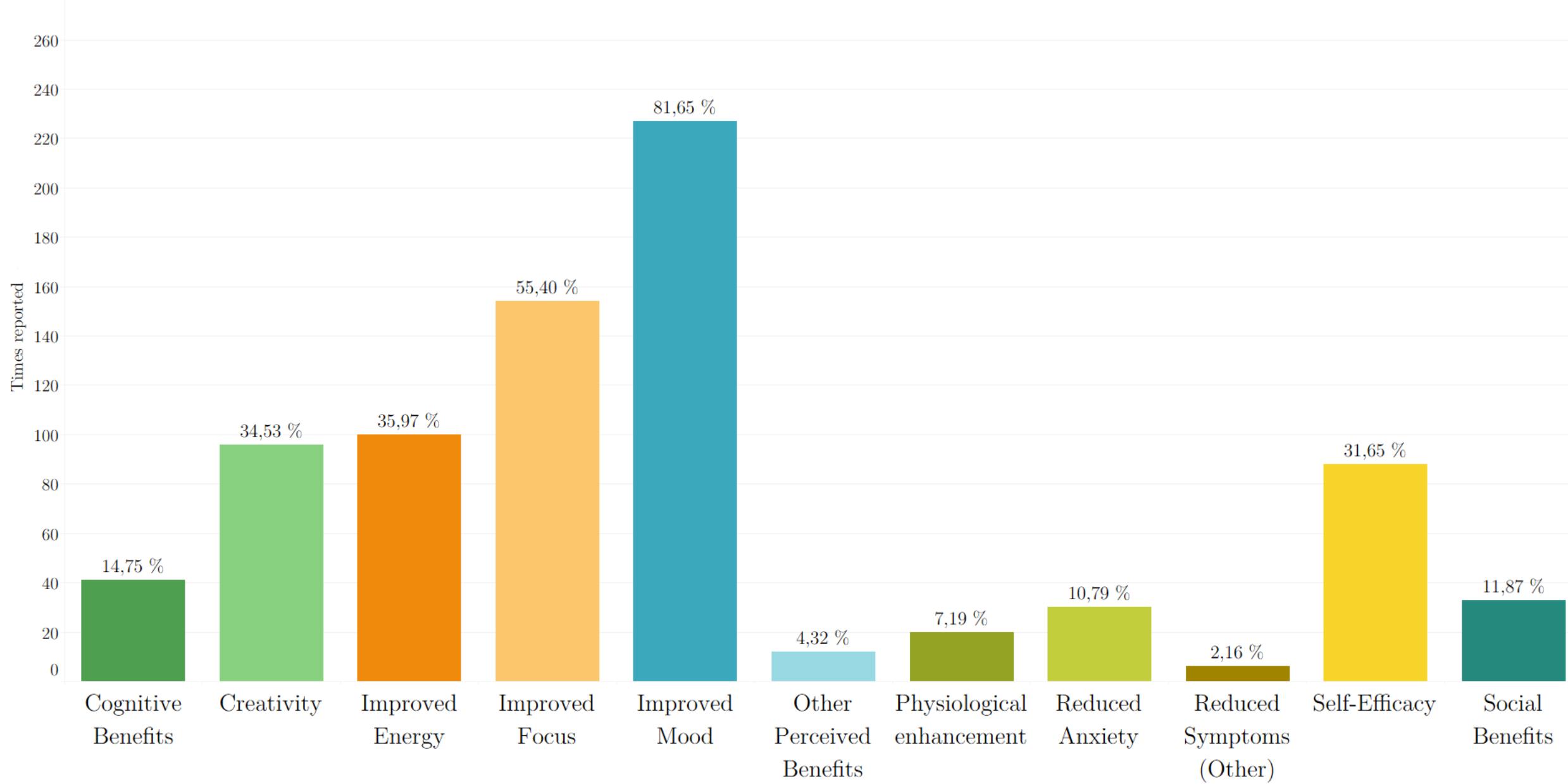


Improved Creativity
Enhancement
Mood Energy Focus

Productivity
Reduced Anxiety Cognitive Thought
Motivation Empathy
Intelligence Spirituality
Shifting Side Wakefulness Awareness
Alertness Memory Outlook
Calm Connection Introspection
Connection Sensitivity Substance
Novelty Dose Emotional Confidence
Depression Clarity Positive Engagement
Sociability Sleep Care
Headaches Self Heightened Mindful Perspective
Appreciation Trauma Lack Stress

Meditation
Sense Dependence Control
Skills
Agency
Effects Social Communication
Openness Presence
Emotional Confidence
Sleep
Care
Lack
Stress

Most common benefits reported





DESVENTAJAS



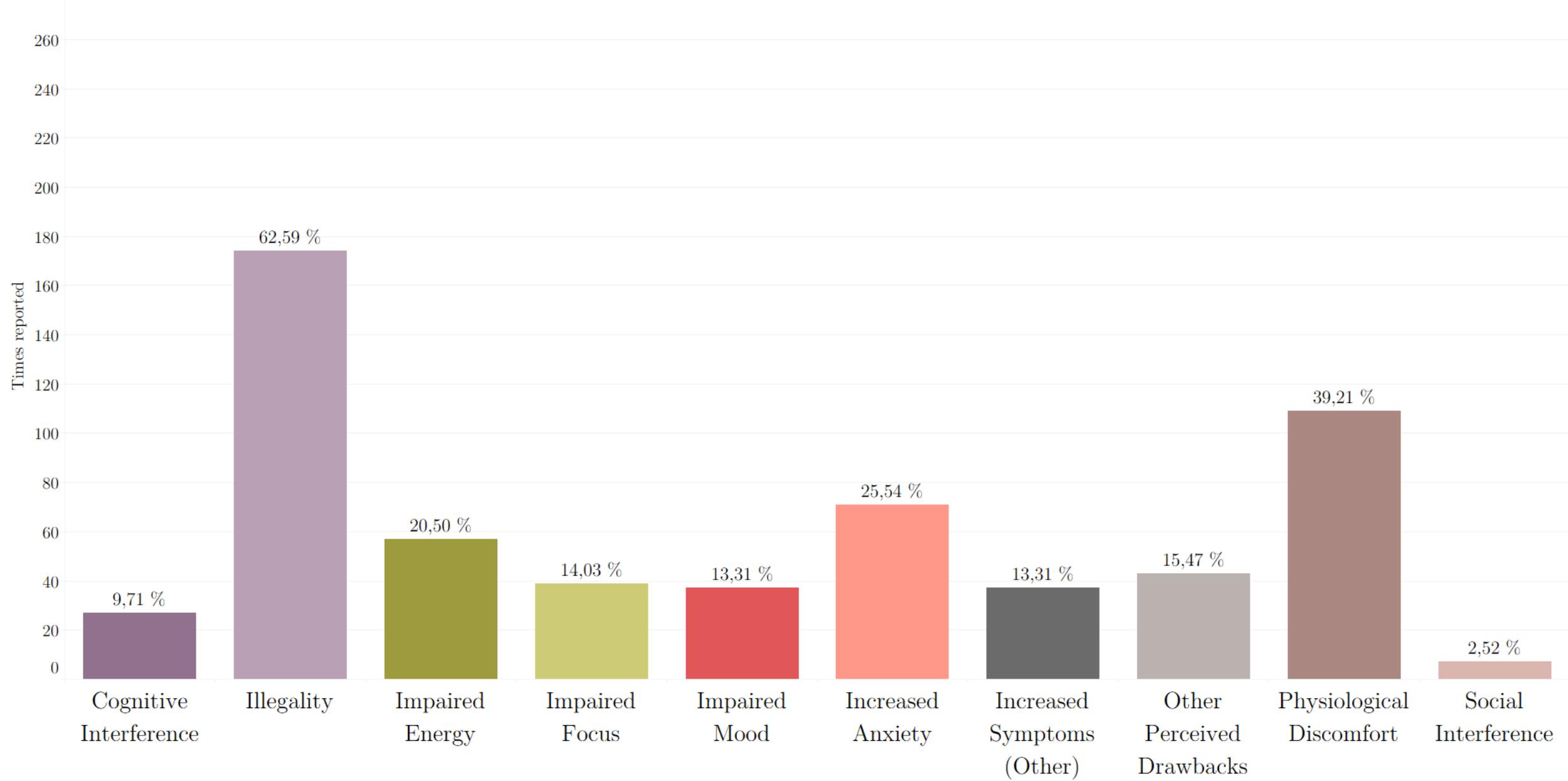


A word cloud visualization on a black background, featuring words in red and blue. The words are categorized by color and include:

- Red Words:** Illegality, Stigma, Issues, Dose, Anxiety, Effect, Restlessness, Discomfort, Sleep.
- Blue Words:** Focus, Body, Poor, Anxiety, Effect, Preparation, Duration, Reduced, Comedown, Appetite, Emotionality, Pupil, Bad, Overengagement, Concerns, Racing, Depth, Adverse, Communication, Dependence, Irritability, GI, Visual, Skills, Mania, Existential, Taste, Risk.
- Other Words:** Headache, Substance, Cost, None, Events, Fatigue, Rumination, Dissociation, Tolerance, Unusualness, Memory, Misc.

The word "Illegality" is the largest and most prominent red word. Other large words include "Dose", "Focus", "Body", "Poor", "Anxiety", "Effect", "Restlessness", and "Discomfort". The word "Focus" is partially obscured by the large "Body" word.

Most common drawbacks reported

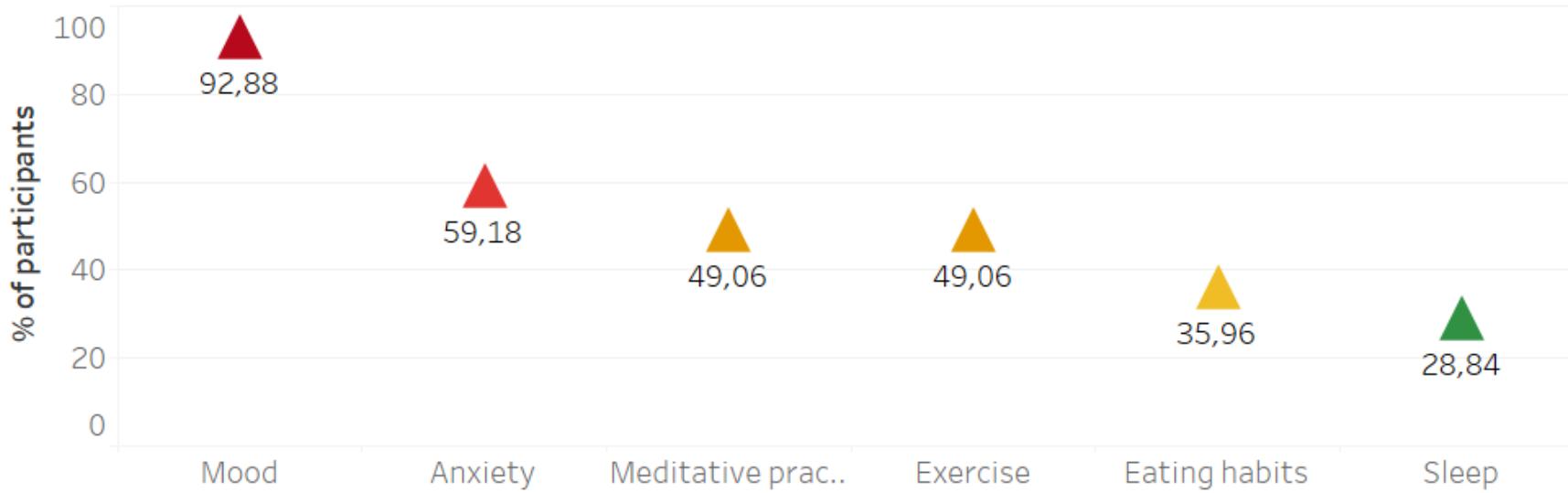




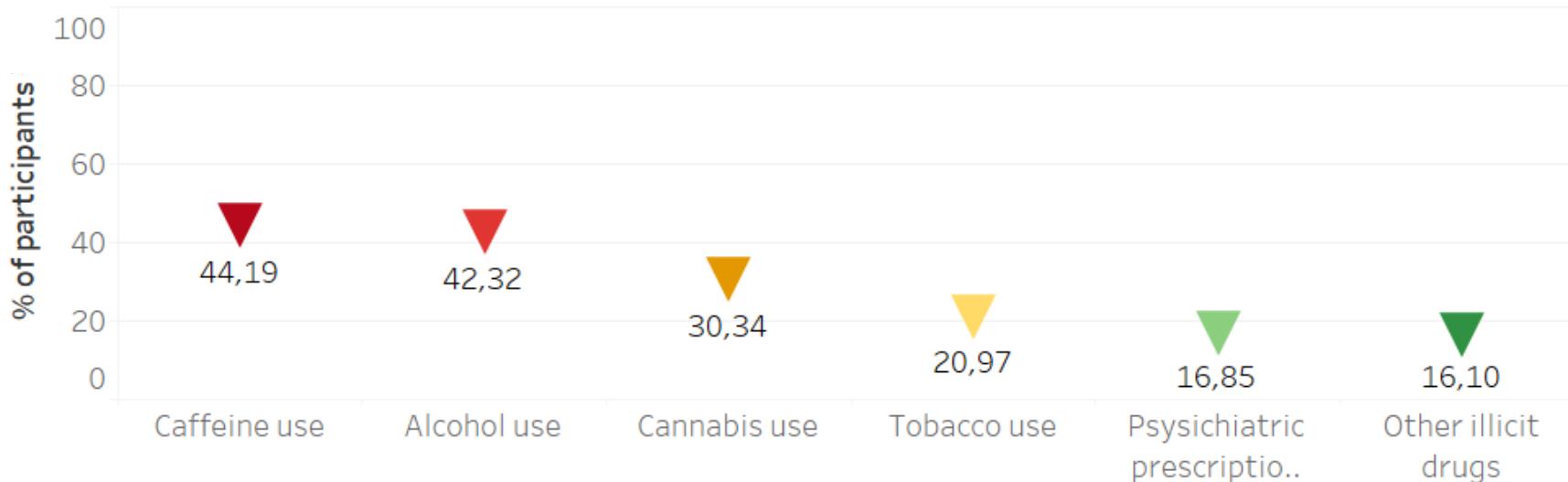
MEJORAS ESPECÍFICAS Y REDUCCIONES DE CONSUMO DE OTRAS DROGAS

Improvements and consumption reductions

Improvements as a result of microdosing



Consumption reductions



CONCLUSIONES

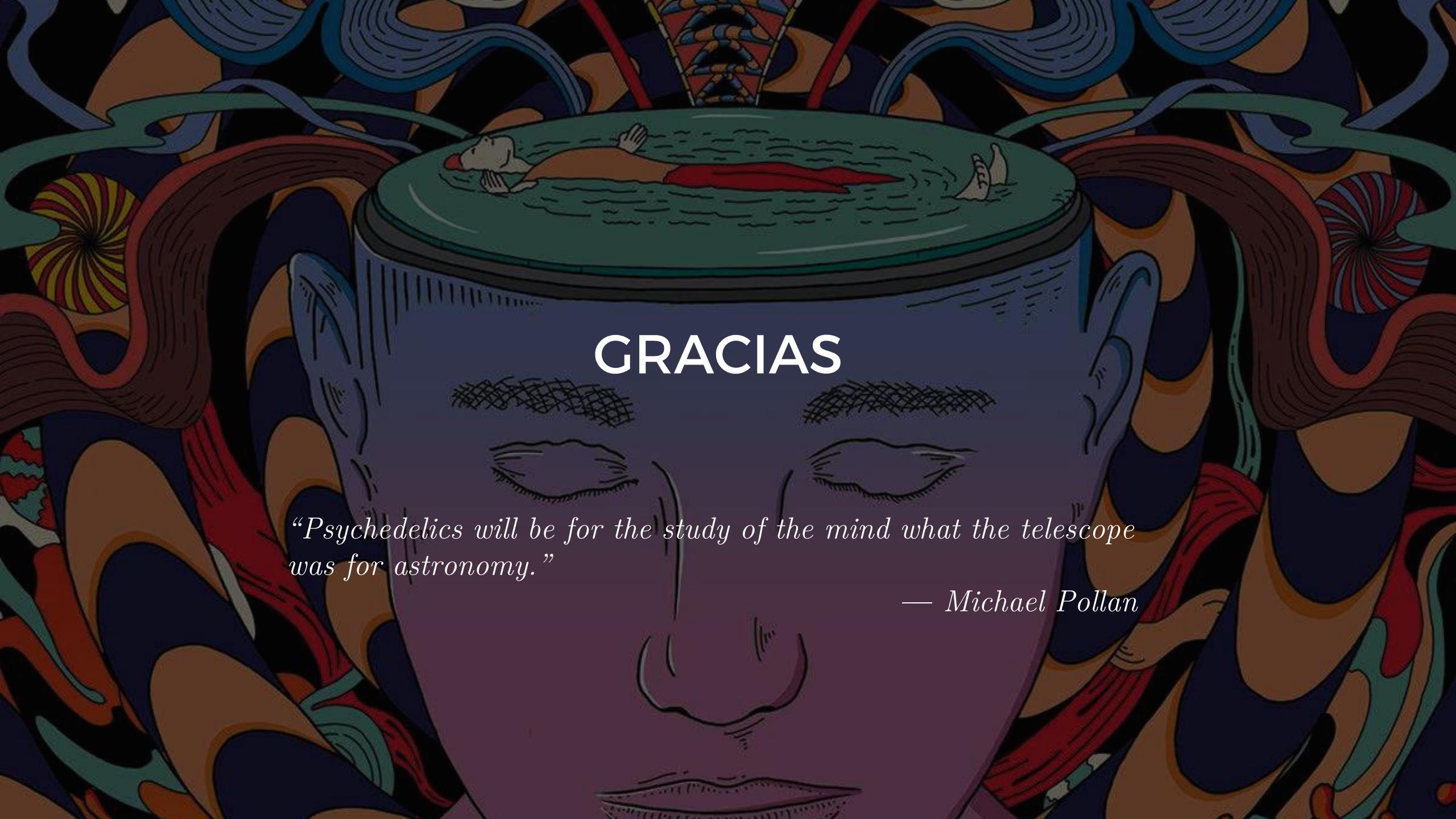
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- i. La mayoría de los participantes reportaron beneficios en el ánimo, concentración y niveles de energía
 - ii. En cuanto a mejoras específicas, un 92,88 % mejoró el estado de ánimo y un 59,18 % los niveles de ansiedad.
 - iii. El microdosaging tuvo un impacto significativo en la reducción del consumo de cafeína, alcohol, cannabis y otras drogas de prescripción.
 - iv. Las desventajas asociadas al microdosaging fueron principalmente relacionados sobre la ilegalidad, y en ciertos casos reportaron baja concentración e imprecisión de las dosis.
 - v. Otro grupo de personas experimentó cierto malestar físico, sin embargo, el número de desventajas registradas fue considerablemente menor.
 - vi. Los resultados de microdosaging con LSD y psilocibina presentan, en general, resultados positivos sobre el estado mental de los participantes y consumo de otras sustancias. Es necesario continuar las investigaciones eliminando posibles sesgos y más experimentos con doble ciegos.

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GRACIAS

“Psychedelics will be for the study of the mind what the telescope was for astronomy.”

— Michael Pollan