# Measuring Insight Level After Psychedelic Experience Among The Indian Population

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| ARTICLE INFO | ABSTRACT |
|---|---|
| | The present study aims to investigate the relationship between psychedelics and insight among the sample population of indians above the age of 18 years. Psychedelics are subclass of hallucinogenic drugs whose primary effect is to trigger non-ordinary mental states and an apparent expansion of consciousness. Substances such as Lysergic Acid Diethlyamide (LSD), mescaline, Dimethyl tryptamine (DMT), and psilocybin are classic psychedelics. Insight means being able to be aware of oneself, or a situation. Across cultures entheogens (plants containing psychoactive substances) have been used for thousands of years in ritualistic context. it is said that it brings about visionary or mystical experiences that helps one in their spiritual journey. One hundred adults between the ages 19-40 completed The Psychedelic Integration Scale (PIS) containing the Integration Engagement Scale and Experienced Integration Scale. The required data were collected through these self- report questionnaires. The data were analysed using different statistical tools such as |
| | **Key Words:** Psychedelics, Insight, self awareness |

## Introduction

The term Psychedelics,derived from the greekwords psyche: soul/mind and deloun: to manifest are a subclass of hallucinogenic drugs whose primary effect is to trigger non-ordinary mental states and an apparent expansion of consciousness. Substances such as Lysergic Acid Diethlyamide (LSD), mescaline, Dimethyl tryptamine (DMT), and psilocybin are classic psychedelics. Researches across the world shows the potential of psychedelics as a tool to treating mental health issues, and even a better alternative to pharmaceuticals. It still stands controversial after they were made illegal by the U S government in the 1960s but the very country has been open to the revolutionary changes these substances can bring about in the field of mental health due to the recent decade's research on the same. It is reported that psychedelics—when administered in a clinical setting with psychotherapeutic support—produce remarkably rapid, robust, and sustained improvements in a variety of psychiatric and addictive conditions. These conditions include major depressive disorder , clinically-significant depressive and anxious symptoms in the context of life-threatening cancer, obsessive compulsive disorder, alcohol use disorder and smoking cessation.

Psychedelics such as LSD, psilocybin, DMT, structurally resemble serotonin. The substances bind to serotonin receptors and activate them, especially the 5-HT2A receptor. This activation leads to the release of neurotransmitters such as dopamine and glutamate. When all of these neurotransmitters interact together it creates a heightened excitability which is thought to be involved in the characteristic effects of psychedelics such as altered perception, enhanced sensory experiences and changes in thought process.

Psychedelic research is rare in india, even when psychedelic assisted psychotherapy is done abroad and many states across the U.S and few countries has decriminalized the use of psychedelic substances. This research paper aims to shed light on psychedelic usage and its benefits if any among the indian population.

## Review of literature

Grob et al 2011 conducted a study Pilot study of psilocybin treatment for anxiety in patients with advanced-stage cancer with population of people suffering from anxiety and depression. There were significant reductions in trait anxiety at 3 months and depression in 6 months.

Johnson et al 2014 conducted a Pilot study of the 5-HT2AR agonist psilocybin in the treatment of tobacco addiction on long term chronic tobacco smoking. 80% of sample abstinant at 6 month follow up was observed.

Gasser et al 2014 conducted a study Safety and efficacy of lysergic acid diethylamide-assisted psychotherapy for anxiety associated with life-threatening diseases, and found significant decreases in state and trait anxiety vs very low dose at 2 months and it sustained for 12 months.

Bogenschutz et al 2015 conducted a study Psilocybin-assisted treatment for alcohol dependence: a proof-of-concept study and found significant decrease in drinking behaviours for up tp 9 months.

Antidepressant effects of a single dose of ayahuasca in patients with recurrent depression: a preliminary report by Osorio Fde et al 2015 found a single dose of ayahuasca helped in significant decreases in depressive symptoms for up tp 21 days.

Ross et al conducted a study Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: a randomized controlled trial to find significant decreases in anxiety and depression vs niacin at 7 weeks and sustained for 6.5 months.

## Methodology

### Aim
the aim of this research is to measure the insight level after psychedelic experience among indian population

### Objectives
To test if there is a significant difference between male and female on acquiring insight

### Hypothesis
H01: there is no significant difference between male and female insight level after a psychedelic experience

### Sample Selection
The samples collected for the study were from 21 females and 79 males belonging to the age group 19-40 years from Indian culture and semi urban background. The sampling method used for this data collection is convenient sampling, from, across India. The total number of samples are100.

### Inclusion criteria
• females ranging from age 18- 40
• males ranging from age 18-40
• adults belonging to indian nationality
• adults from semi urban background

### Exclusion criteria
• females younger than 18 years
• males younger than 18 years
• Females older than 40
• Males older than 40
• Individuals from foreign nationalities

### Tools
The data was collected using googleforms. The scientific tool used was the Psychedelic Integration Scales. Psychedelic integration refers to the post-acute period of time following psychedelic drug administration. The scales contain two subscales; Integration Engagement Scale (IES), to measure positive behavioral engagement with integration and the Experienced Integration Scale (EIS), to measure internal aspects of feeling integrated.

### Consent form
Answering the questionnaire is a voluntary task, participants were be asked for consent and assured of the confidentiality of their responses. They were informed of the academic purpose of the study as well.

## Procedure

The questionnaire was made using googleforms. The form consisted of information based on purpose of study and voluntary participation and consent, criteria required to participate in the survey, questions about brief sociodemographic data, 12 questions from the subscaleIntegration Engagement Scale (IES), and 12 questions from the subscale Experience Integration Scale (EIS). Both come under the Psychedelic Integration Scale. The survey was published online and eligible participants contributed to the study. A total of 100 responses were recorded, with 79 males and 21 females.

## RESULTS

### Group Statistics

| | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| x | MALE | 79 | 48.87 | 7.367 | .829 |
| | FEMALE | 21 | 51.67 | 6.003 | 1.310 |

The table provides group statistics categorized by gender, specifically MALE and FEMALE, for a variable denoted as x. Here's a detailed explanation of each statistical measure:

1. **Gender**: This column indicates the two groups being compared, MALE and FEMALE. Each group represents individuals of a particular gender.
2. **N (Number of Observations)**: This column displays the count of observations or individuals within each gender group. In this case, there are 79 observations for MALE and 21 observations for FEMALE.
3. **Mean (Average)**: The mean is the average value of the variable x within each gender group. For MALE, the mean is 48.87, indicating that, on average, the variable x has a value of 48.87 among males. Similarly, for FEMALE, the mean is 51.67, suggesting that, on average, the variable x has a higher value of 51.67 among females.
4. **Std. Deviation (Standard Deviation)**: The standard deviation measures the dispersion or spread of values around the mean within each gender group. A larger standard deviation implies greater variability in the data. For MALE, the standard deviation is 7.367, indicating that the values of x among males are spread out around the mean of 48.87. For FEMALE, the standard deviation is 6.003, suggesting that the values of x among females are slightly less spread out around the mean of 51.67 compared to males.
5. **Std. Error Mean (Standard Error of the Mean)**: The standard error of the mean estimates the variability of sample means if multiple samples were taken from the same population. It indicates the precision of the sample mean as an estimate of the population mean. A larger standard error suggests less precision in estimating the population mean. For MALE, the standard error mean is 0.829, while for FEMALE, it is 1.310. This implies that the sample mean for FEMALE may be less precise or more variable compared to MALE.

In summary, the table provides a comparative analysis of the variable x between MALE and FEMALE groups, showcasing differences in average values, variability, and precision of the measurements within each gender category. These statistics offer valuable insights into the distribution and characteristics of the data with respect to gender.

### Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | |
|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference |
| x | Equal variances assumed | .571 | .452 | -1.600 | 98 | .671 | |
| | Equal variances not assumed | | | -1.802 | 37.670 | .346 | |

The table presents the results of two statistical tests: Levene's Test for Equality of Variances and the t-test for Equality of Means. These tests are commonly used to assess differences between groups or conditions in a dataset.

1. **Levene's Test for Equality of Variances**:
   - The first column specifies the test being conducted, which is Levene's Test for Equality of Variances.
   - The second column displays the F statistic, which is a measure of the ratio of the variances between the groups being compared. In this case, the F value is 0.571.

o The third column presents the significance level (Sig.), often denoted as p-value. It indicates the probability of obtaining the observed F statistic if the null hypothesis (that the variances are equal) is true. Here, the p-value is 0.452, which is greater than the typical significance level of 0.05.
o When the p-value is greater than the chosen significance level, we fail to reject the null hypothesis. Therefore, in this case, we do not have sufficient evidence to conclude that the variances between the groups are significantly different.

### 2. t-test for Equality of Means:
o The first column indicates the type of t-test being conducted, with two rows corresponding to different assumptions about the equality of variances.
o The second column displays the t statistic, which measures the difference between the means of the two groups relative to the variability within the groups. For the assumption of equal variances, the t-value is -1.600, and for the assumption of unequal variances, it is -1.802.
o The third column provides the degrees of freedom (df), which are used to determine the critical value of the t statistic from the t-distribution.
o The fourth column presents the significance level (Sig.) for a two-tailed test. It indicates the probability of observing the obtained t statistic if the null hypothesis (that the means are equal) is true. For the assumption of equal variances, the p-value is 0.671, and for the assumption of unequal variances, it is 0.346.
o As with Levene's Test, when the p-value is greater than the chosen significance level, we fail to reject the null hypothesis. Therefore, in both cases, there is no significant difference between the means of the two groups.

In summary, based on the results of these tests, we do not have sufficient evidence to conclude that there are significant differences either in variances between the groups (Levene's Test) or in means between the groups (t-test). These findings suggest that the groups being compared do not exhibit statistically significant differences in terms of variability or central tendency.

The major findings from the presented statistical tests are as follows:

### 1. Equality of Variances (Levene's Test):
o The Levene's Test for Equality of Variances did not yield a significant result (p = 0.452), indicating that there is no strong evidence to suggest that the variances of the two groups (presumably MALE and FEMALE) are significantly different.
o This finding implies that the variability within each group is relatively similar, which is an important assumption for certain parametric statistical tests, such as the t-test.

### 2. Equality of Means (t-test):
o The t-test for Equality of Means, assuming equal variances, resulted in a non-significant difference between the means of the two groups (p = 0.671).
o Similarly, when assuming unequal variances, the t-test also did not show a significant difference in means between the groups (p = 0.346).
o These findings suggest that there is no statistically significant difference between the average values of the variable being measured (variable x) in the MALE and FEMALE groups.

### 3. Overall Implications:
o The lack of significant differences in both variances and means between the MALE and FEMALE groups suggests that any observed disparities in the variable x are likely due to random variation rather than systematic differences between genders.
o These findings underscore the importance of considering variability and central tendency when comparing groups and interpreting statistical results.
o Researchers should be cautious not to draw conclusions about gender differences based solely on mean values without considering the underlying variability and statistical significance.

In summary, the major findings indicate that there are no significant differences in both the variability and the average values of the variable x between the MALE and FEMALE groups, based on the conducted statistical tests.

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