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### Correlations Between Nicotine Usage, Mental Wellbeing, and Other Psychoactive Substances Among College Students

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# Correlations between Nicotine Usage, Mental Wellbeing, and other Psychoactive Substances among College Students



## INTRODUCTION

- Adolescents and young adults are particularly susceptible to nicotine receptor upregulation and addiction due to enhanced brain plasticity (Yuan, 2015)
- Adolescents also have a higher prevalence of smoking than both adults and children (Kasza, 2015)
- Studies have demonstrated that psychological disorders like depression, anxiety, alcoholism and eating disorders are correlated with smoking (Degenhardt, 2001)
- Studies show that within the last year, about 14.6% of male college students took prescription amphetamines, such as Adderall, 42.5% have used marijuana, 7.2% have used MDMA, 7% have used cocaine, 6.8% have used LSD, and 3.8% have used tranquilizers with females having similar statistics (Palmer et al., 2012)
- The purpose of this study was to analyze the relationships between frequent/non-frequent nicotine use and the use of illicit ADHD medications, marijuana, specific psychoactive drugs, and mental distress among college students

## HYPOTHESIS

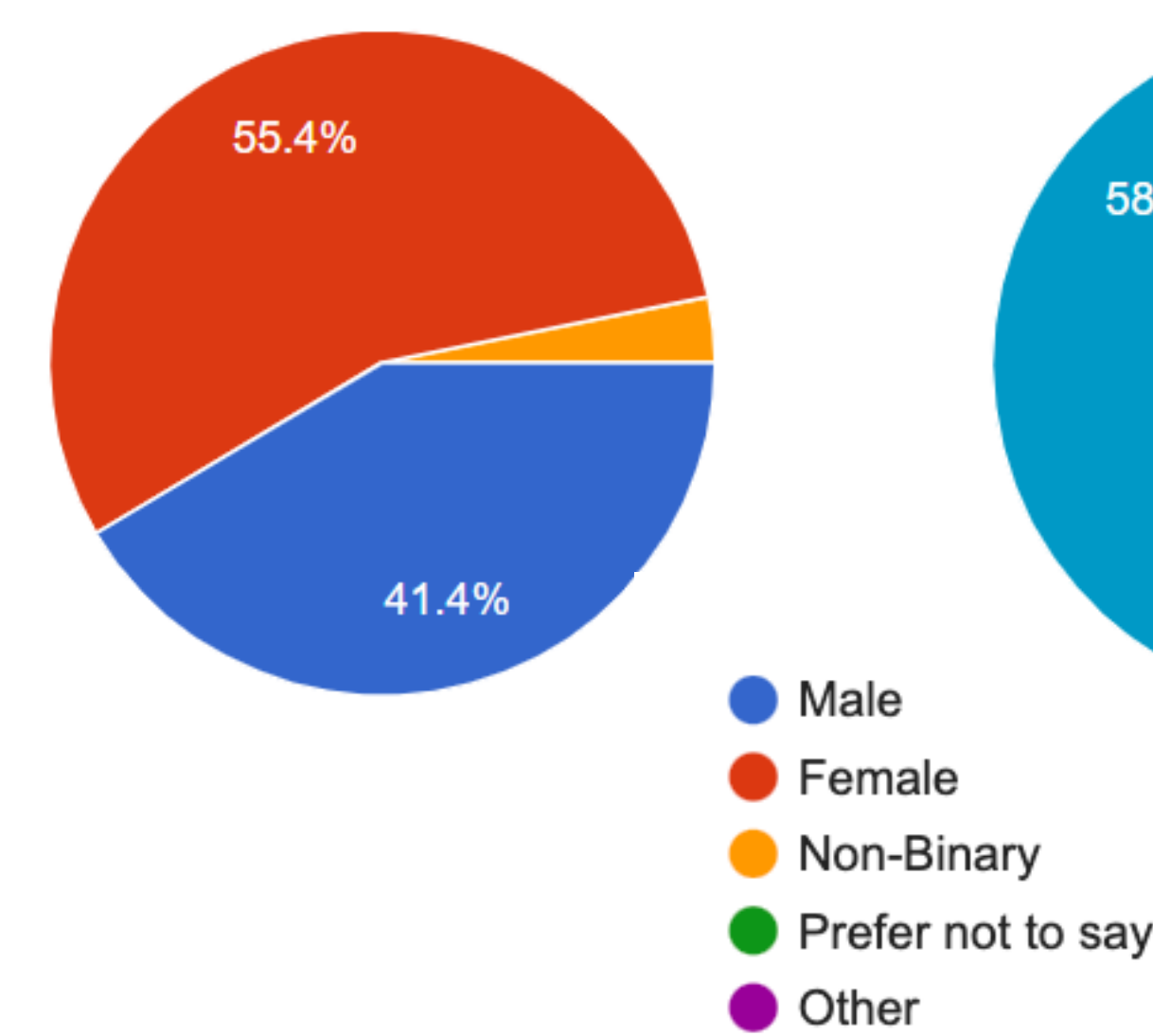
- We hypothesized that frequent nicotine use would be positively correlated to poor mental well being and use of other psychoactive substances

## METHODS

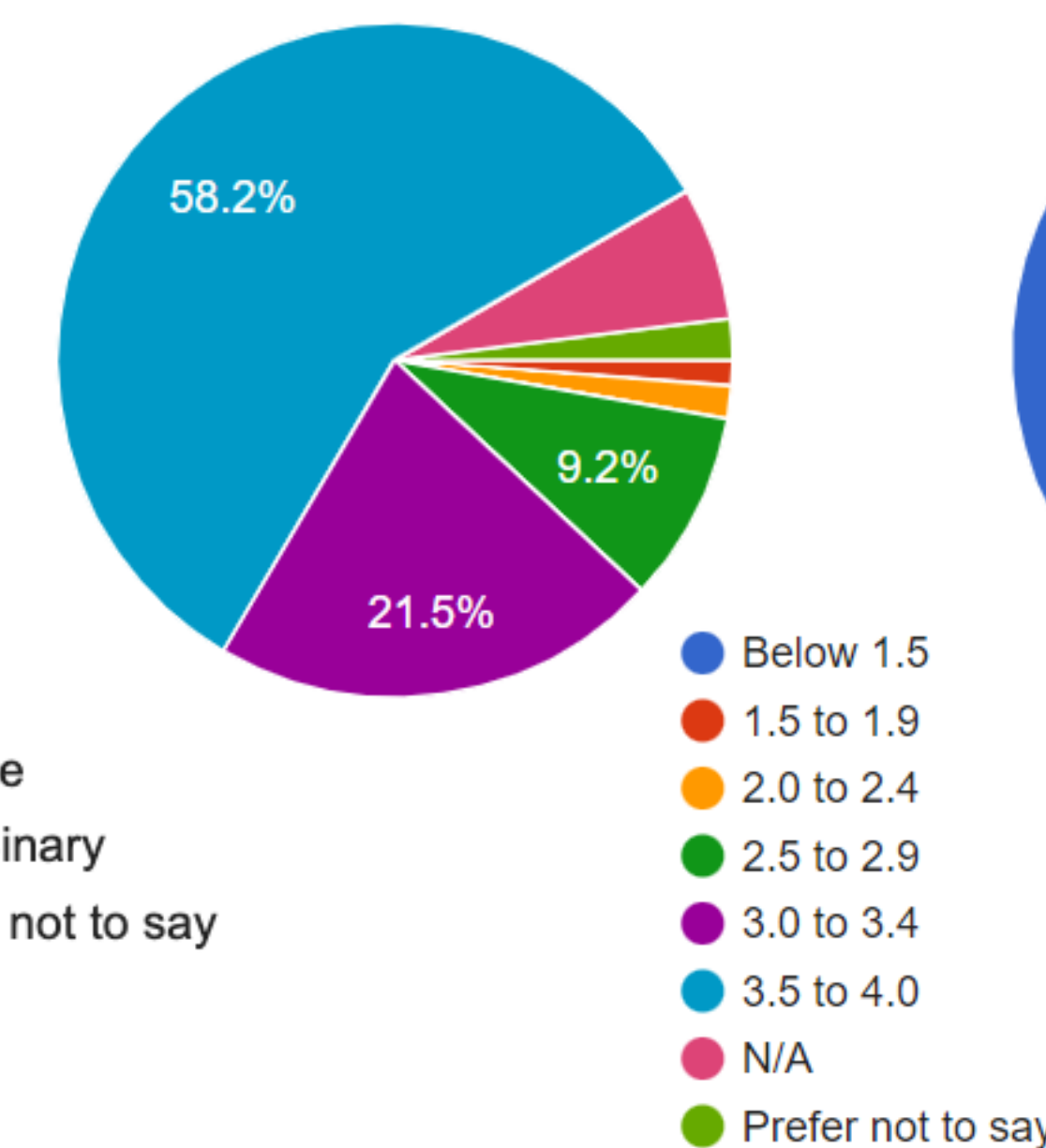
- Data was collected using a cross sectional study through an anonymous Google Form survey
- Inclusion criteria were 18 years or older and enrolled in a higher education institution. The questionnaire inquired about frequency of nicotine use, experiences of mental distress, and use of psychoactive substances
- The survey was spread via group chats, GroupMe group chats, social media platforms, and Binghamton University Outreach events
- In our survey we utilized past surveys such as the K6 scale, Perceived Stress Scale, Stress Mindset Scale, Ontario Student Drug Use and Health Survey, and the Brief Resilience Scale
- Data was analyzed using Pearson's Correlation Coefficient in SPSS, version 25.0

## RESULTS

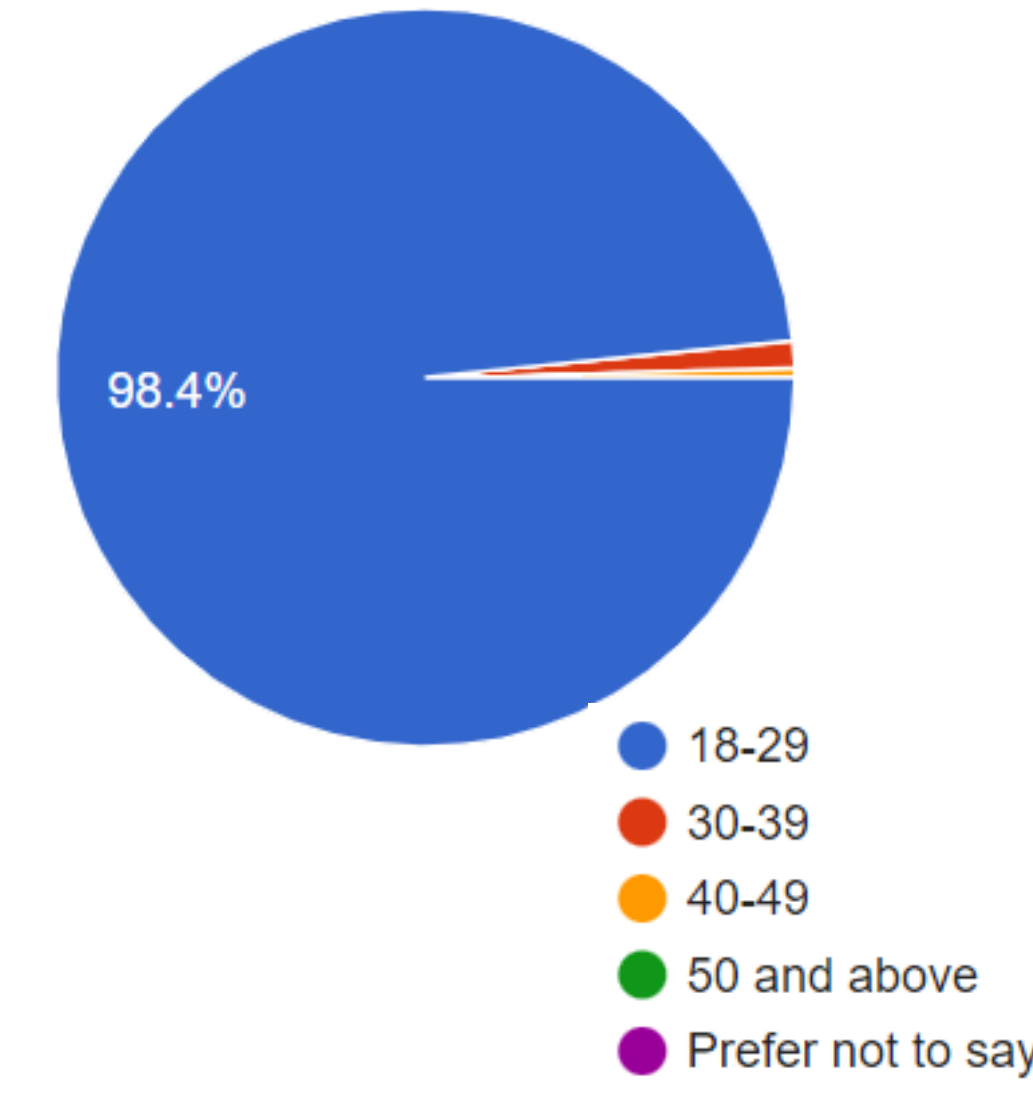
**Figure 1- Gender Identity of Participants**



**Figure 2- Grade Point Average (GPA) of Participants**



**Figure 3- Age of Participants**



**Table 1: Correlation Between Non-frequent Nicotine use (Few Puffs to Whole Cigarette in lifetime) and Mental Distress**

Mental Distress	r
Feeling nervous	-.130*
Feeling hopeless	-.138*
Feeling restless/fidgety	-.131*
Feeling everything was an effort	-.132*
Feeling able to do only half or less of what you would normally have been able to do	-.140*

**Table 2: Correlation Between Frequent Nicotine Use (100 or More Cigarettes in Lifetime and at Least 1 Cigarette Every Day During the Last Month) and Mental Well-Being**

Mental Well-Being	r
Feeling so depressed that nothing could cheer up	.170**
Feeling hopeless	.128*
Feeling unable to work or carry out your normal activities	.136*
Experiencing stress facilitates my learning and growth	-.122*

**Table 3: Correlation between Very-frequent Nicotine Use and Infrequent use and Psychoactive Drug Use in the Last 12 Months**

Use Category	Correlation
<b>Frequent Use and Psychoactive Drug Use:</b>	
Used cannabis 40 times	.182**
Used LSD or "acid" 40 times	.492**
Used pain relief pills without a prescription	.492**
Used sedatives or tranquilliser with a prescription 6-9 times	-.424*
<b>Non-Frequent Use and Psychoactive Drug Use:</b>	
Used psilocybin or mescaline 6-9 times	.293*
Taken any medications for ADHD	.225**
Used LSD or "acid" but not in the last 12 months	.255*
Used sedatives or tranquilizers	.424*

$p < 0.01 = **$   $p < 0.05 = *$

## DISCUSSION AND CONCLUSION

- Non-frequent nicotine use, is defined as a few puffs to a whole cigarette in a lifetime, was negatively correlated ( $p < 0.05$ ) to mental distress
- Frequent nicotine use, is defined as 100 or more cigarettes in a lifetime and at least 1 cigarette every day during the last month, was positively correlated ( $p < 0.01$ ,  $p < 0.05$ ) to poor mental well being
- There was a negative statistically significant correlation between frequent nicotine use and feeling like stress facilitates learning and growth
- Frequent use was positively correlated with Cannabis and LSD or "acid" used 40 times, and use of pain relief pills without prescription. Non frequent use was positively associated with psilocybin use (6-9 times), ADHD medication use, LSD or "acid" use in the last 12 months, and use of sedatives or tranquilizers
- Frequent nicotine use may have a relationship to poor mental well being
- Nicotine use may make users more susceptible to use other psychoactive substances (Office of the Surgeon General, 2004)
- There was a correlation ( $p < 0.01$ ) between LSD or acid use in both non frequent users and frequent users suggesting that both are likely to abuse this substance
- Overall, both non frequent and very frequent are positively correlated with psychoactive drug use. Although, an unexpected finding was the negative correlation between frequent use and use of sedatives or tranquilizers with a prescription
- This study could aid educational programs to spread awareness and curtail usage of nicotine abuse, especially on college campuses where it is a widespread issue

## FUTURE WORK AND LIMITATIONS

- Possible limitations and sources of error include: small sample size (702 participants), self-report bias, and sampling bias towards Binghamton University students
- Another possible limitation is that our results did not include responses from participants that did not identify themselves as male or female
- Future research should include more controlled variables and a larger sample size
- Preventative measures such as proper exercise and diet should be encouraged

## REFERENCES

