



# VCU

Virginia Commonwealth University  
**VCU Scholars Compass**

---

Undergraduate Research Posters

Undergraduate Research Opportunities  
Program

---

2020

## Impulsivity in Sexual Trauma Survivors and their Use of Alcohol and Substances

Kayla McLean

Follow this and additional works at: <https://scholarscompass.vcu.edu/uresposters>

© The Author(s)

---

### Downloaded from

McLean, Kayla, "Impulsivity in Sexual Trauma Survivors and their Use of Alcohol and Substances" (2020).  
*Undergraduate Research Posters*. Poster 310.  
<https://scholarscompass.vcu.edu/uresposters/310>

This Book is brought to you for free and open access by the Undergraduate Research Opportunities Program at VCU Scholars Compass. It has been accepted for inclusion in Undergraduate Research Posters by an authorized administrator of VCU Scholars Compass. For more information, please contact [libcompass@vcu.edu](mailto:libcompass@vcu.edu).



**VCU**

# Impulsivity of Sexual Trauma Survivors and their use of alcohol and substances

Kayla McLean, Jasmin Vassileva, Ph. D.

## Abstract

The current study investigates the associations of neurocognitive ‘choice’ impulsivity (delay discounting) and personality ‘trait’ impulsivity (UPPS) with alcohol and substance use among college students reporting history of sexual trauma. Spit For Science data was used as the sample, specifically looking at the 2017 cohort (N=2476). Spit for Science is an university-wide project conducted by Virginia Commonwealth University, that collects data primarily through survey questions with an optional DNA sample from participants. Participants were asked about both choice and trait impulsivity the spring of their freshman year. A bivariate correlation was used to compare different substances and alcohol use to different facets of the UPPS trait impulsivity and correlations were used to measure the relationship between different levels of delay discounting (small, medium, large, overall) with alcohol and substance use among female-identifying students reporting history of sexual trauma.

## Introduction

Sexual trauma is often a common event in the average life of the female-identifying college student. With the “national rate of over 20% of female-identifying persons experiencing some form of sexual trauma before the end of their first year”, alcohol and substance use are some of the most common coping mechanisms to deal with traumatic events (Conley et. al, 2017). The wide availability of different substances and alcohol on college campuses may further increase the possibility of addiction and reoccurrence of sexual victimization. Impulsivity is one potential mechanism that may mediate the link between history of trauma and substance misuse. We examine the associations of two types of impulsivity: personality trait impulsivity (UPPS) and neurocognitive choice impulsivity (delay discounting, [k]) with self-report of alcohol and substance use (i.e., cannabis, cocaine, opioids, sedatives, stimulants, and prescription stimulants, opioids, sedatives, and anxiolytics).

## Methodology

The overall Spit 4 Science population of cohort 5 was filtered for any female-identifying student who have experienced any form of sexual trauma prior to and since attending college, resulting in a population of (N=688). Each substance was then coded to combine prior lifetime use and use since entering college, this produced data of a binary nature(0= no history of use , 1= history of substance use). We then applied bivariate correlation analyses associating self-reported use of different substances to discounting different magnitudes of delayed discounting rewards (small, medium, large, overall) and then through each sub-factor of the UPPS scale.

## Results/Discussion

The results revealed that only cannabis and prescription stimulants were correlated significantly with discounting delayed rewards overall (In\_overall\_k) and particular rewards of small magnitude (In\_small\_k). The medium magnitude showed positive correlations with prescription opioids and prescription stimulants. Alcohol and other types of substances were not statistically related to discounting of delayed rewards. Different facets of UPPS trait impulsivity (lack of perseverance, lack of premeditation, negative urgency, positive urgency, and sensation seeking), showed positive relationships with the following substances; cannabis, opioids, stimulants, prescription sedatives and prescription anxiolytics.

## Trait Impulsivity (UPPS)

Table 1.

Correlations among substance use and UPPS variables

|                       | Cannabis | Opioids | Cocaine | Stimulants | Anxiolytics (Rx) | Sedatives (Rx) |
|-----------------------|----------|---------|---------|------------|------------------|----------------|
| Sensation Seeking     | 0.340**  | ***     | 0.263*  | ***        | ***              | ***            |
| Negative Urgency      | ***      | 0.239*  | ***     | 0.231*     | 0.429*           | 0.431*         |
| Positive Urgency      | ***      | 0.273*  | ***     | ***        | ***              | ***            |
| Lack of Premeditation | ***      | ***     | ***     | ***        | ***              | ***            |
| Lack of Perseverance  | ***      | ***     | ***     | ***        | ***              | ***            |

\*p<0.05, \*\*p<0.01, \*\*\*(not significant)

## Choice Impulsivity (delay discounting)

Table 2.

Correlations among substance use and delayed discounting reward magnitudes

|                          | Cannabis | Stimulants (Rx) | Opioid (Rx) |
|--------------------------|----------|-----------------|-------------|
| Overall k (In_overall_k) | 0.101*   | 0.114*          | 0.099*      |
| Small k (In_small_k)     | 0.108*   | 0.124*          | ***         |
| Medium k (In_medium_k)   | 0.118*   | 0.112*          | ***         |
| Large k (In_large_k)     | ***      | ***             | ***         |

\*p<0.05, \*\*p<0.01, \*\*\*(not significant)

## Conclusion

The current study reveals significant associations of choice impulsivity to lifetime substance use among students with history of sexual trauma. The results indicated that cannabis and prescription stimulants have positive correlations with discounting of delayed rewards, particularly rewards of small magnitude and the overall magnitude. The results also concluded that the positive correlations within the sub-factors of the UPPS show relationships between one’s emotions and the specific substance used. This could possibly indicate substance use as a means of coping when one has experienced sexual trauma. Future studies with this sample may examine differences between students who experienced sexual trauma and those who have not. Studies could also measure the effects of different types of traumatic events on impulsivity and substance use and how certain stressors may influence choice and trait impulsivity as well as drug of choice.

## Works Cited

Conley, A. H., et al. “Prevalence and Predictors of Sexual Assault among a College Sample.” *Journal of American College Health*, vol. 65, no. 1, 2017, pp. 41–49., doi:10.1080/07448481.2016.1235578.

Cyders, M. A, et al. Integration of impulsivity and positive mood to predict risky behavior: development and validation of a measure of positive urgency. *Psychol Assess* 2007;19:107-118.

Kirby KN et al. Heroin addicts have higher discount rates for delayed rewards than non-drug-using controls. *J Exp Psychol Gen* 1999;128:78-87.

## Acknowledgements

I would like to thank my Principal Investigator Jasmin Vassileva, Ph. D., as well as the GREAT directors Amy Adkins, Ph. D., Herbert Hill, and Danielle Dick, Ph. D. for all the help and support. I would also like to thank Nathaniel Thomas and Ryan Shahidi for help with R. This research was supported by the National Institute On Alcohol Abuse And Alcoholism of the National Institutes of Health under Award Number R25AA027402. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Spit for Science has been supported by Virginia Commonwealth University and P20 AA017828, R37AA011408, K02AA018755, and P50 AA022537 from the National Institute on Alcohol Abuse and Alcoholism, and UL1RR031990 from the National Center for Research Resources and National Institutes of Health Roadmap for Medical Research. We would like to thank the Spit for Science participants for making this study a success, as well as the many University faculty, students, and staff who contributed to the design and implementation of the project.