

AACAP Jeanne Spurlock, MD, Research Fellowship in Substance Abuse and Addiction for Minority Medical Students, supported by the National Institute on Drug Abuse (NIDA), and AACAP's Campaign for America's Kids

The AACAP Jeanne Spurlock, MD, Research Fellowship in Substance Abuse and Addiction for Minority Medical Students, supported by the National Institute on Drug Abuse (NIDA), is named in honor of Jeanne Spurlock, MD, in recognition of her lifetime of opening doors for colleagues from diverse backgrounds and fostering career advances. The summer fellowships encourage outstanding minority students to pursue careers in substance abuse and addiction research in child and adolescent psychiatry. The fellowships are administered through AACAP's Department of Research, Grants, and Workforce, AACAP's Substance Use Committee, under the direction of Garrett Sparks, MD, and Amy Yule, MD, along with AACAP's Diversity and Culture Committee, under the direction of Annie Li, MD, and Wanjiku Njoroge, MD.



Gerrica D. Alexander, BA

University of Illinois at Chicago

Project: *Substance Use and Trauma in Pregnant and Parenting Foster Youth*

Mentors: Lisa Razzano, PhD, and Vanessa Klodnick, PhD, Thresholds



Christian Sascha Brown, BA

Medical College of Georgia at Augusta University

Project: *Marijuana Use in Adverse Childhood Experience (ACE) Exposed Young Adults and the Mediating Effect of Family Environment*

Mentors: Dale Peeples, MD



Loren S. Hardeman, MS, MBA

Morehouse School of Medicine

Project: *Examining Demographics and Modes of Cannabis Use Among Youth Enrolling in a Cannabis Use Disorder Treatment Trial*

Mentor: Kevin Gray, MD, Medical University of South Carolina



Chuchitra Thanigaivasan, MS

Marshall University

Project: *Adverse Childhood Experiences Moderate the Relation Between Minoritized Status and Engaging in Substance Use Among Adolescent Psychiatric Inpatients*

Mentors: Jeffrey I. Hunt, MD, Sarah A. Thomas, PhD, and Jennifer Wolff, PhD, Warren Alpert Medical School of Brown University



Jewel C. Washington, BS

Virginia Commonwealth University

Project Title: *Risk and Protective Factors of Alcohol Use Disorder in Late Adolescence Across Ethnic Ancestry: A Secondary Data Analysis*

Mentors: Anna Wright, PhD, and Cheryl Al-Mateen, MD

Substance Use & Trauma in Pregnant & Parenting Foster Youth

Gerrica Alexander, BA¹, Vanessa V. Klodnick, PhD, LCSW^{2,3}, Lisa A. Razzano, PhD, CPRP^{1,3}

¹Department of Psychiatry, College of Medicine, University of Illinois Chicago, ²School of Social Work, UT-Austin, & ³Thresholds

Background

Substance use is common among young people during the transition to adulthood in context of socializing & developmentally-normative experimentation + risk taking.

However, in particularly vulnerable & marginalized young adults, including young mothers diagnosed with serious mental health conditions & comorbid conditions (e.g., PTSD, ADHD), substance use needs may be associated with increased trauma history and mental health diagnoses, among other factors.

Research Objectives

1. Assess how known mental health diagnoses and ACES influence risk for substance use issues;
2. Evaluate how psychiatric engagement relates to substance use; &
3. Describe individual attitudes and behaviors toward parenting and evaluate risk for child maltreatment.

Methods

Data were collected from the Thresholds' Mothers Project Transitional Living Program (TLP) between 2020-2022 agency electronic healthcare record. During that period, N=53 mothers (i.e., individuals pregnant or already parenting) participated in TLP & homelessness outreach & counseling services. The UIC Institutional Review Board (IRB) approved this study.

This sample includes those (n=23) who completed the Illinois Medicaid Comprehensive Assessment of Needs & Strengths (IM-CANS). The IM-CANS assesses exposure to trauma, including adverse childhood experiences (ACES) & substance use, among many other risk factors.

Defining Substance Use Need:

- Past or current elevated score (i.e., 2+) on IM-CANS substance use screening module;
- Past history of substance use outpatient treatment or hospitalization; &
- Substance use diagnosis.

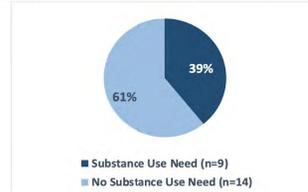
Data was analyzed using descriptive statistics, & thematic coding in consultation with co-authors familiar with program, IM-CANS, & mixed-methods research.



Use this QR code to learn more about Thresholds Mothers Project design & core practices, as well as other Youth & Young Adult Services & research.

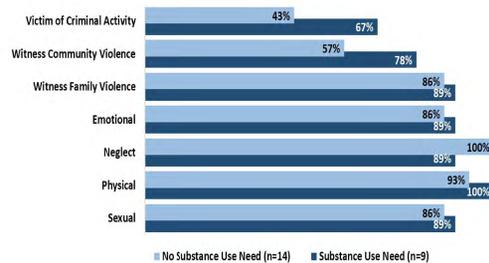
Demographics & Characteristics (n=23)

- Participants were all female identifying
- Mean age of total sample was 21.3 years
- 61% identified as Black/African American; 22% White, 9% Native American/American Indian, 9% Other
- 65% diagnosed with PTSD; 35% Major Depressive Disorder, & 17% Bipolar Disorder
- 61% prescribed more than 1 psychotropic medication



Results

Nonparametric tests (chi square) revealed no statistically significant associations between PTSD and SU, witnessing community violence and SU, nor being a victim of criminal activity and SU. However, given the smaller sample size, there are trends in these associations.

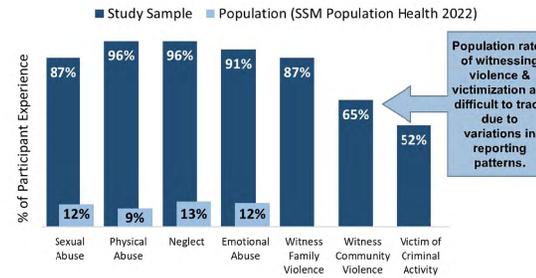


Participants typically were classified with more than 1 serious mental health diagnosis. Among participants with an identified substance use need (below), most were prescribed multiple psychiatric medications, including medications with adverse effects and potential for dependency. No associations were found among psychotropic medication types and substance use needs.

Participants	Psychiatric Diagnoses	Prescribed Psychiatric Medications
1	Major depressive disorder, Posttraumatic stress disorder	Prazosin, Trazodone
2	Posttraumatic stress disorder	Trazodone, Fluoxetine
3	Generalized anxiety disorder, Posttraumatic stress disorder	Divalproex Sodium, Propranolol
4	Posttraumatic stress disorder, Attention-deficit hyperactivity disorder	Quetiapine, Divalproex Sodium, Trazodone
5	Posttraumatic stress disorder - unspecified, Oppositional defiant disorder	Sertraline, Bupropion, Trazodone
6	Bipolar I disorder, Posttraumatic stress disorder, Alcohol use disorder	Gabapentin, Topiramate, Lurasidone, Quetiapine
7	Attention-deficit hyperactivity disorder, predominantly hyperactive type	
8	Major depressive disorder, Posttraumatic stress disorder, Borderline personality disorder	Gabapentin, Topiramate, Lurasidone
9	Generalized anxiety disorder, Other substance use disorder	Lamotrigine, Hydroxyzine

Human subjects review protocol: STUDY2022-1050 – EXEMPT (De-identified, Extant Data).

This sample reports high rates of Adverse Childhood Events (ACES).



Even with exposure to ACES & other risks, the majority, 73%, of all TLP participants were rated as "low risk" for child maltreatment. Individual participant attitudes and behaviors varied greatly. For example:



Qualitative Analysis Findings

- Cannabis is the primary substance of choice.
- Other substances for reported use included: alcohol, nicotine, Xanax, OTC medications, etc.
- Multiple participants verbally reported environmental & peer influences on overall substance use & frequency.
- 4 out of 9 participants with identified substance use needs reported recognizing a problem, but still being unwilling to take steps toward recovery.
- Few participants reported active use during pregnancy
- One participant was hospitalized for alcohol use poisoning during program.

Conclusions

All children among participants also have multiple ACES exposure due to having a mother with a diagnosed serious mental health condition. This is important to consider among the development for their children.

Polypharmacy, a growing concern in older adults, should also be considered in young people with serious mental health conditions, who have experienced significant trauma.

Substance use needs often go under-detected among young adults with complex trauma history & serious mental health conditions by community mental health providers.

There is a significant need for increasing competencies across the healthcare workforce in both assessment & integrated treatment for concurrent mental health & substance use needs.

Project Limitations:

- Data regarding psychiatric engagement are scant, e.g., (hospitalizations, outpatient treatment, medication adherence).
- Diagnoses are determined at intake and not always re-evaluated or confirmed for treatment planning.

Thank you to the Jeanne Spurlock, MD Research Fellowship in Substance Abuse supported by NIDA & AACAP's CFAK.



The UIC Center on Mental Health Services Research & Policy at the College of Medicine's Department of Psychiatry engages in research, training, & technical assistance to enhance service delivery and increase knowledge about behavioral health.

For over 60 years, Thresholds has provided state-of-the-science behavioral health services to people with serious mental illness who comprise a diverse population within public mental health services. Most services recipients are living with complex needs & challenges.

Thresholds Mothers' Project is part of an expanding, nationally recognized Youth and Young Adult Services Division.



60 YEARS | HOME HEALTH HOPE

References are available on request. Please contact Gerrica Alexander via email at: galex4@uic.edu

Marijuana Use in Adverse Childhood Experience (ACE) Exposed Young Adults and the Mediating Effect of Family Environment

Christian Sascha Brown, BA¹ ; Dale Peeples, MD²

¹Medical College of Georgia at Augusta University ²Augusta University Department of Psychiatry ³Augusta University Department of Family Medicine

⁴Georgia Prevention Institute



INTRODUCTION

Current literature defines three domains of Adverse Childhood Experiences (ACEs):

Abuse, Neglect, and Household Dysfunction. Exposure to ACEs has been correlated with adverse health outcomes in adulthood, with most research documenting a dose-response relationship. Further research is needed to document factors that mediate or moderate this dose-response relationship. This study is the first to our knowledge to examine the mediating effect of family environment on marijuana use as an outcome following ACE exposure among Georgia youth.

Objectives

1. Evaluate the relationship between Adverse Childhood Experience (ACE) exposure before age 18 and marijuana use in adulthood
2. Identify mediators of the association between ACE exposure and marijuana use
3. Describe patterns in resilience and depression across degrees of ACE exposure

METHODS

- Cross-sectional secondary analysis was performed on data collected by the Georgia Prevention Institute during the Georgia Stress and Heart (GSH) study.
- Recruited participants were between 5 and 16 years of age in 1989. Records were identified from a visit during which data were collected on ACEs, substance use, resilience, depression, and family environment.
- Study demographics: 431 valid records, 53.4% female, 46.4% male, 54.1% black, 45.9% white, average age 28.3 years. ACE groupings are as follows: Group 0 = No exposure, 0 ACEs; Group 1= Low exposure, 1-2 ACEs; Group 2 = Moderate exposure, 3 ACEs; Group 3 = Severe exposure, 4+ ACEs.
- Multivariate linear regression was performed with marijuana use over a 30-day period as the outcome. Adverse Childhood Experiences (ACEs), Family Environment Scale (FES), Connor-Davidson Resilience Scale (CD-RISC), and Beck Depression Inventory (BDI) were evaluated as independent variables. Age, sex, and race were adjusted as covariates.

References

Shaw, D.S., Brennan, J.L., Scott, B.G., Wiggins, J.R., & Green, M.E. (2011). The impact of adverse childhood experiences on an urban pediatric population. *Child Abuse & Neglect, Volume 35*(June 6), 491-512. <https://doi.org/10.1016/j.chabu.2011.03.006>

Cohen, E.M., Barkham, T.E. (1990). Development of a New Resilience Scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 11*(1), 85-99. <https://doi.org/10.1002/da.10111>

Gay, S.M., Sengco, L.M. (2019). Research Review: What Barriers Exist for Adolescent Marijuana Use? *Journal of Child Psychology and Psychiatry, Volume 60*(1), 67-77. <https://doi.org/10.1111/jcpp.14210>

Palm, V.J., Jaha, S.P., Koenig, H. (1996). Relationship of Childhood Abuse and Neglect to Lifetime Risk of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, Volume 10*(4), 76-81. [https://doi.org/10.1016/S0890-2738\(96\)00013-8](https://doi.org/10.1016/S0890-2738(96)00013-8)

Mas, R. H., Miles, N. S. (1993). Family resilience with women. *Family Abuse, Child Development, Psychology, Press.*

Martinez, A., Stapp, M., Kipp, C., Richard, C., Thelen, J.E. (2019). Mediating the Effect of Adverse Childhood Experiences on Adult Resilience in Substance-Related Risk Behaviors. *Health Promotion Practice, Volume 20*(1), 1290-1297. <https://doi.org/10.1177/1524902918802826>

RESULTS

Family Environment mediates the predictive relationship between Adverse Childhood Experience (ACE) exposure and subsequent marijuana use in young adulthood.



Results

Table 1. Demographic Information

Age	
Mean	28.4
Range	19.4 to 37.6
SD	3.1
Race/Ethnicity	
Black	233
White	198
Gender	
Female	230
Male	201

Table 2. Survey Responses

Family Environment Index (coh + exp) - cnf	
Mean	9.2 (SD 5.6)
Range	-7 to 18
Connor-Davidson Resilience Scale	
Mean	75.6 (SD 13.8)
Range	27 to 100
Beck Depression Inventory	
Mean	6.9 (SD 7.8)
Range	0 to 39

Table 3. Adverse Childhood Experience Exposure

	Mean	Std. Deviation	N		Mean	Std. Deviation	N	
30 dys - # of times marijuana	1.355	5.8800	131	23.1% of study participants reported 4+ ACE exposures	30 dys - # of times marijuana	1.360	5.1958	139
Family environment index (coh+exp)-cnf	11.7879	4.22058	131		Family environment index (coh+exp)-cnf	10.0737	5.17331	139
a. ACE Group = 0				a. ACE Group = 1				
	Mean	Std. Deviation	N		Mean	Std. Deviation	N	
30 dys - # of times marijuana	1.463	6.2863	40	23.1% of study participants reported 4+ ACE exposures	30 dys - # of times marijuana	4.204	10.0759	93
Family environment index (coh+exp)-cnf	8.9000	4.93444	40		Family environment index (coh+exp)-cnf	4.4449	5.49059	93
a. ACE Group = 2				a. ACE Group = 3				

Marijuana use in young adulthood was predicted by:

1. ACE exposure before age 18, $p = 0.03$
2. Adult depression after age 18, $p = 0.02$

Multivariate linear regression showed significant interaction between ACE and FES such that Family Environment attenuated the association between ACEs and marijuana use ($p=0.04$).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.171 ^a	.029	.027	6.9020	1.757

a. Predictors: (Constant), ACE adverse childhood experiences score
b. Dependent Variable: 30 dys - # of times marijuana

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.192 ^a	.037	.035	6.7997	1.758

a. Predictors: (Constant), Beck Depression Inventory Total
b. Dependent Variable: 30 dys - # of times marijuana

Pearson's correlation demonstrated a statistically significant positive relationship between ACE and BDI ($r=0.433$, $p<0.01$). BDI and CD-RISC were strongly negatively correlated ($r = -0.483$, $p<0.01$).

Conclusions

Family Environment mediated the interaction between ACEs and marijuana use. Consequently, interventions designed to reduce marijuana use among adolescents and young adults must address the family unit to be maximally effective.

Acknowledgements

ACKNOWLEDGEMENTS

This project was funded by the Georgia Prevention Institute and was supported by the Georgia Prevention Institute. Special acknowledgement and thanks to Dr. Christy Ledford, PhD, FACH³ and Dr. Li Chen, PhD⁴ for their expertise and contributions to this project.



Examining Demographics and Modes of Cannabis Use Among Youth Enrolling in a Cannabis Use Disorder Treatment Trial

L. Hardeman, MBA¹ K. Gray, MD²

¹ Morehouse School of Medicine, MD Program; ² Medical University of South Carolina



Abstract

Substance use in adolescence has been linked to lasting substance-related consequences (Gray, K. M., & Squeglia, L. M. (2018)) such as mental health disorders, underachievement in school, and substance use disorders. Adolescence represents vulnerability to substance use due to the underlying neurobiology during this developmental period. If early intervention is unsuccessful, addiction can become the landscape of adulthood. Cannabis remains the most used substance among youth presenting for substance use treatment (Hammond, C. J., Chaney, A., Hendrickson, B., & Sharma, P. (2020)). However, little is known about how demographics, modes of use and motivation of youth presenting for substance use disorder treatment influence clinical outcomes.

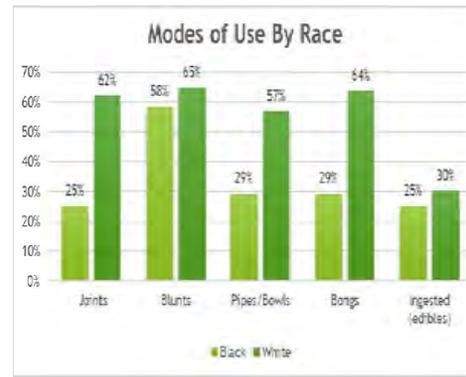
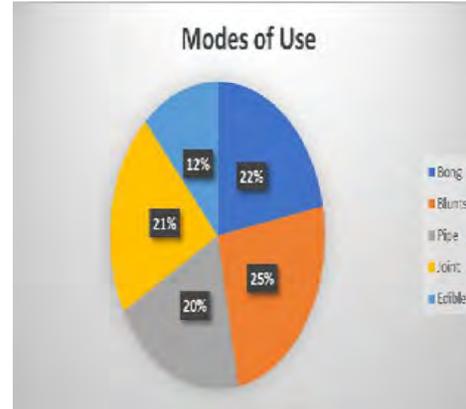
Objectives

Youth cannabis use is common and may be associated with short- and long-term adverse consequences. Adolescent-onset cannabis users are more likely than adult-onset users to develop a maladaptive pattern of use characterized as cannabis use disorder (CUD). While epidemiological surveys provide information on characteristics of youth who use cannabis, less is known about these characteristics among those presenting for CUD treatment. Within an ongoing CUD pharmacotherapy clinical trial for youth ages 15-21, we sought to examine associations between demographics, modes of cannabis use, and levels of motivation, readiness, and confidence in ability to achieve cannabis cessation.

Methods

Participants enrolling in the National Institute on Drug Abuse (NIDA) sponsored trial "N-acetylcysteine for Youth Cannabis Use Disorder" (R01 DA042114) completed a demographic survey and, as part of baseline Timeline Follow-Back substance use assessment procedures, reported their modes of cannabis use in the past 30 days. Additionally, participants indicated on 1-10 scales their levels of motivation, readiness, and confidence in ability to cease cannabis use. We examined whether demographic variables (e.g., age, sex, race, and ethnicity) were associated with modes of use and levels of cannabis cessation motivation, readiness, and confidence.

Subpopulation		Frequency (n=156)	(%)
Gender	Male	73	46.8
	Female	83	53.2
Race	Black	24	15.8
	White	116	76.3
Age Group	15-17y	16	10.3
	18-21y	140	89.7



Results

At the time of analysis, 156 participants enrolled and completed the assessments of interest. Participants averaged 18 years old, 53% of the sample was female, and 69% graduated high school or obtained a GED. In terms of race, 16% identified as Black/African American, 76% as White/Caucasian, <0.01% Asian, 0.07% as more than one race, and <0.01% were unknown/preferred not to report. In terms of Ethnicity, 14% identified as Hispanic. The most common modes of cannabis use included blunts, bongs, pipes, joints, and edibles. Black/African American participants used blunts by at least 29% more than any other mode, while White/Caucasian participant mode of use was consistent across all modes. In terms of motivation, participants rated their motivation to quit using cannabis at 5.9 on a 1-10 scale, while they rated their readiness and confidence to quit using cannabis at 5.6 and 6.8, respectively.

Conclusions

Evaluating demographics and associated characteristics of youth enrolling in a treatment trial for CUD may provide important insights to inform treatment, including the potential for tailoring treatment based on presenting baseline characteristics.

References

- Gray, K. M., & Squeglia, L. M. (2018). Research Review: What have we learned about adolescent substance use? *Journal of child psychology and psychiatry, and allied disciplines*, 59(6), 618–627. <https://doi.org/10.1111/jcpp.12783>
- Hammond, C. J., Chaney, A., Hendrickson, B., & Sharma, P. (2020). Cannabis use among U.S. adolescents in the era of marijuana legalization: a review of changing use patterns, comorbidity, and health correlates. *International review of psychiatry (Abingdon, England)*, 32(3), 221–234. <https://doi.org/10.1080/09540261.2020.1713056>

On a scale of 1-10, with 1 being not motivated and 10 being extremely _____, how ...

	1) ... MOTIVATED are you to quit using marijuana?	2) ... READY are you to quit using marijuana?	3) ... confident are you that you will be ABLE TO quit using marijuana?
N	143	143	143
	0	0	0
Mean	5.92	5.61	6.80
SE of Mean	.192	.210	.222
Median	6.00	6.00	7.00
Mode	5	7	10
Std. Deviation	2.292	2.506	2.649

Adverse Childhood Experiences moderate the relation between minoritized status and engaging in substance use amongst adolescent psychiatric inpatients

Chuchitra Thanigaiavan MS¹, Sarah Thomas PhD^{2,3}, Elizabeth Thompson PhD^{2,3}, Sophia Sodano BS⁴, Micaela Maron BS⁴, Jeffrey Hunt MD^{2,4}, Jennifer Wolff PhD^{2,3}

¹Joan C. Edwards School of Medicine - Marshall University, Huntington, WV

²Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI

³Bradley Hasbro Children's Research Center, Providence, RI

⁴E.P. Bradley Hospital, Riverside, RI



Learning Objectives

1. Describe rates of endorsing **substance use** and experiencing **adverse childhood events (ACEs)** amongst an adolescent psychiatric inpatient population.
2. Distinguish how a **minoritized status** (based on race, ethnicity, sexuality, or gender identity) may be associated with greater or lesser risk for adolescent **substance use** depending on experiencing **ACEs** (e.g., feeling unsupported, bullying, discrimination, separation from caregiver).
3. Consider how this knowledge may inform treatment planning for minoritized youth with a history of experiencing adverse events in the context of acute psychiatric care.

Introduction

- Adversity due to **minoritized status** increases susceptibility to **ACEs** (Mersky et al., 2013).
- Within vulnerable groups, the strong link amongst structural disadvantage, maladaptive coping behaviors, and child maltreatment lends to increased risk of **ACEs** exposure that contributes to life course disparities in health outcomes (Forster et al., 2019).
- Experiences of ethnic and racial discrimination leads to traumatic stress and emotional dysregulation and is also associated with increased internalizing symptoms and externalizing behavior (Loyd et al., 2019).
- ACEs** are more prevalent among sexual minority youths, in comparison to their heterosexual counterparts (McCabe et al., 2020).
- Exposure to **adverse childhood experiences (ACEs)** is linked to poor health outcomes later in life, with more frequent depressive symptoms, anxiety, and **tobacco, alcohol, and cannabis use** (Mersky et al., 2013).
- To illustrate, **ACEs** facilitate the development of substance use disorders and mental health disorders through stress and epigenetic changes (McCabe et al., 2020).
- Higher number of **ACEs** have been linked to greater odds of using **alcohol, tobacco, cannabis**, and illicit substances and binge drinking with ethnic variation in these associations (Forster et al., 2019).
- Study objective: Test whether the relation between **minoritized status** and reporting ever using a **substance** depends on **ACEs** in a sample of adolescent psychiatric inpatients.

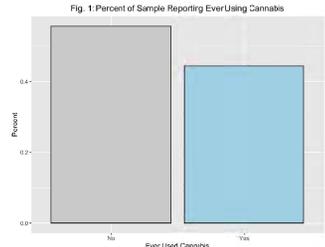
Methods

- Participants were 417 youth (11-18 years old, $n = 15,041[6.4]$, 64% female) hospitalized at an inpatient psychiatric unit in Northeast USA admitted from 4/2021 to 5/2022.
- 299 adolescents (71.7%) endorsed at least 1 **minoritized** identity (range: 0=8; median 1, racial, ethnic, sexuality, and/or gender identity).
- Adverse Events** experienced ranged from 0-19 ($M = 7.22$, $SD = 4.33$).
- Adolescents indicated if they ever used **cannabis, alcohol, or vaped nicotine**.
- Logistic regression moderation analyses tested the association amongst **minoritized status, ACEs**, and type of **substance use** (covariates: age, sex); significant interactions were probed at 16th, 50th, and 84th percentiles (ACEs: 2, 7, 12).

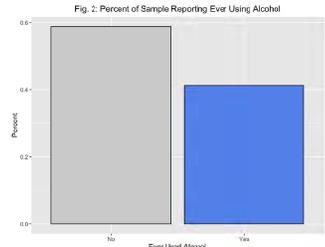
Table 1: Demographic characteristics of the sample

Variable	N	N = 417
Age	416	15.04(1.64)
Biological Sex	415	
Male	148	(36%)
Female	267	(64%)
ACEs	417	7.22(4.33)
Diverse Gender	417	101(24%)
Diverse Sexuality	417	192(46%)
American Indian	417	25(6.0%)
Asian	417	15(3.6%)
Black	417	70(17%)
Hispanic	417	9(2.2%)
Middle Eastern	417	8(1.9%)
White	417	268(64%)
Other Race	417	31(7.4%)
Hispanic	417	113(27%)

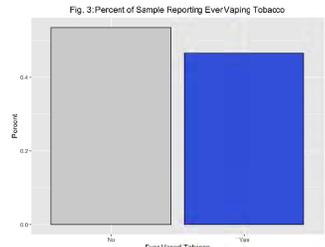
- Gender diverse and sexuality diverse: youth not identifying as cisgender and heterosexual, respectively; dichotomized separately as yes/no. **Minoritized status**: total score of sexuality diverse, gender identity diverse, and each racial and ethnic identity.
- Figure 1 indicates the proportion the sample who had ever used **cannabis** (44.4%)



- Figure 2 indicates the proportion the sample who had ever used **alcohol** (41.2%)



- Figure 3 indicates the proportion the sample who had ever **vaped tobacco** (46.5%)



Results

Primary Moderation Analyses

- We investigated whether the relation between **minoritized status**, as defined by sexual, gender, racial and ethnic identity, and ever having used a substance varies as a function of the number of **ACEs** experienced by adolescents hospitalized at an inpatient psychiatric hospital.
- Results demonstrate that the number of **ACEs** significantly moderated the link between **minoritized status** and **substance use** for every substance evaluated (Table 2).
- These findings indicate that the relation between having a **minoritized status** and ever having used either **cannabis, alcohol, or vaped tobacco** depends on the number of **ACEs** reported by youth.

Table 2: Logistic regression moderation analyses

Characteristic	Cannabis			Alcohol			Vaping		
	OR ^a	95% CI ^a	p-value	OR ^a	95% CI ^a	p-value	OR ^a	95% CI ^a	p-value
Minoritized	0.52	0.32, 0.81	0.006	0.70	0.46, 1.04	0.087	0.49	0.28, 0.72	0.001
ACEs	1.08	1.00, 1.16	0.042	1.04	0.97, 1.11	0.3	1.05	0.97, 1.12	0.2
Age	1.90	1.39, 2.66	<0.001	1.20	1.06, 1.36	0.005	1.31	1.15, 1.49	<0.001
Sex	1.70	1.08, 2.69	0.020	0.98	0.82, 1.16	0.9	1.22	0.76, 1.93	0.4
Minoritized * ACEs	1.07	1.02, 1.12	0.028	1.06	1.01, 1.11	0.015	1.11	1.06, 1.17	<0.001

^aOR = Odds Ratio, CI = Confidence Interval

Probing Simple Slopes

- Simple slopes analyses** indicated that the slope for the effect of **minoritized status** on the following substances was significant for **cannabis, alcohol, and vaping** under the following conditions,

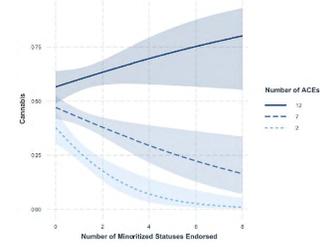
Cannabis

- Minoritized** youth who had experienced a low number of **ACEs** (2) had lower log-odds of ever having used **cannabis**.

Table 3: Simple slopes analyses probing at what level of the moderator the link between **minoritized status** and **cannabis** is significant

Moderator Value	Effect	SE	Z	p	LLCI	ULCI
2	-0.5191	0.1859	-2.7924	0.0063	-0.8897	-0.1485
7	-0.1884	0.1054	-1.7879	0.0738	-0.3949	0.0181
12	0.1413	0.1352	1.0459	0.2957	-0.1238	0.4092

Fig. 4: Cannabis Moderation



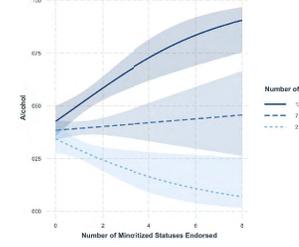
Alcohol

- Minoritized** youth who had experienced a high number of **ACEs** (12) had greater log-odds of ever having used **alcohol**.

Table 4: Simple slopes analyses probing at what level of the moderator the link between **minoritized status** and **alcohol** is significant

Moderator Value	Effect	SE	Z	p	LLCI	ULCI
2	-0.2453	0.1691	-1.4507	0.1489	-0.5788	0.0881
7	0.0373	0.0969	0.3848	0.7006	-0.1527	0.2272
12	0.3198	0.1312	2.4387	0.0148	0.0629	0.5770

Fig. 5: Alcohol Moderation



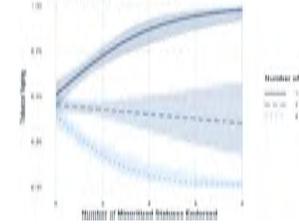
Tobacco Vaping

- Minoritized** youth who had experienced a low number of **ACEs** (2) had lower log-odds of ever having **vaped**, while those experiencing a high number of **ACEs** (12) had greater log-odds of ever having **vaped**.

Table 5: Simple slopes analyses probing at what level of the moderator the link between **minoritized status** and **tobacco vaping** is significant

Moderator Value	Effect	SE	Z	p	LLCI	ULCI
2	-0.5881	0.1900	-3.0900	0.0028	-0.9405	-0.1957
7	-0.0558	0.1040	-0.5307	0.8114	-0.2572	0.1515
12	0.4624	0.1508	3.0712	0.0021	0.1673	0.7576

Fig. 6: Tobacco Vaping Moderation



Conclusion

- Among a sample of adolescents hospitalized in a psychiatric inpatient unit, the link between **minoritized status** and ever having used **cannabis, alcohol, or tobacco vaping** varied depending on the number of **ACEs** experienced.
- Specifically, youth endorsing a minoritized status had significantly lower odds of ever using cannabis if they had experienced a low number of **ACEs**. Conversely, minoritized youth had significantly greater odds of ever having used alcohol if they had a high number of **ACEs**. Finally, results were significant at both ends of the spectrum for vaping tobacco: minoritized youth had lower odds of ever having vaped tobacco if they had a low number of **ACEs**, yet greater odds of ever having vaped tobacco if they had a high number of **ACEs**.
- These results support similar findings in adult populations of the link between adverse childhood experiences among minoritized individuals and risk for substance use.
- Adolescence is a promising developmental period in which to intervene and alter a potential negative trajectory of substance misuse.
- Therefore, considering **ACEs** and an intersectional perspective on life experiences may benefit treatment of minoritized youth inpatients in the context of comorbid psychiatric issues.
- Future studies would benefit by investigating frequency and quantity of this substance use, along with adolescents' motives for use.

References

Alegria, M., Carson, N. J., Goncalves, M., & Keefe, K. (2011). Disparities in Treatment for Substance Use Disorders and Co-Occurring Disorders for Ethnic/Racial Minority Youth. *AM J ACAD CHILD PSY*, 50(1), 22-31.

Evans-Polce, R. J., Krcm, L., Veliz, P. T., Boyd, C. J., & McCabe, S. E. (2020). Alcohol, Tobacco, and Comorbid Psychiatric Disorders and Associations With Sexual Identity and Stress-Related Correlates. *AM J PSY*, 177(11), 1073-1081.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, S. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *The Adverse Childhood Experiences (ACE) Study*. *AM J PREV MED*, 14(4), 245-258.

Forster, M., Rogers, C. J., Benjamin, S. M., Grigsby, T., Lust, K., & Eisenberg, M. E. (2019). Adverse Childhood Experiences, Ethnicity, and Substance Use among College Students: Findings from a Two-State Sample. *SUBST USE MISUSE*, 54(14), 2368-2379.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling.

Loyd, A. B., Horton, A. L., Walden, A. L., Kendall, A. D., Emerson, E., & Donenberg, G. R. (2019). Associations of ethnic/racial discrimination with internalizing symptoms and externalizing behaviors among juvenile justice involved youth of color. *J ADOLESC*, 75(1), 138-150.

McCabe, S. E., Hughes, T. L., West, B. T., Evans-Polce, R. J., Veliz, P. T., Dickinson, K., McCabe, V. V., & Boyd, C. J. (2020). Sexual Orientation, Adverse Childhood Experiences, and Comorbid DSM-5 Substance Use and Mental Health Disorders. *J CLIN PSYCHIATRY*, 81(6).

Mersky, J., Topitzes, J., & Reynolds, S. (2013, November). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the US. *CHILD ABUSE NEGL*, 37(11), 919-925.

Phillips, K., Lawler-Whitson, B., Wells, E., Milson, C., & Hartley, S. (2018). Capturing the impact of adolescent inpatient admissions: The Social Connectedness Scale. *J CHILD PSYCHOL PSYCHIATRY*, 24(3), 631-641.

Pinedo, M. (2019). A current re-examination of racial/ethnic disparities in the use of substance abuse treatment: Do disparities persist? *DRUG ALCOHOL DEPEND*, 202, 162-167.

Wu, L. T., Gering, K., Burchett, B., Woody, G. E., & Blazer, D. G. (2011). Substance use disorders and comorbid Axis I and II psychiatric disorders among young psychiatric patients: Findings from a large electronic health records database. *J PSYCHIATR RES*, 45, 1453-1462.

Acknowledgements

Chuchitra Thanigaiavan was supported by the Jeanne Spurlock Research Fellowship in Substance Use and Addiction for Minority Medical Students, through NIDA and AACAP's Campaign for America's Kids, Sarah A. Thomas was supported by a K23DA050911 award from NIDA. Sponsors had no role in the study design, collection, analysis or interpretation of the data. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Risk and Protective Factors of AUD in Late Adolescence Across Ethnic Ancestry: A Secondary Data Analysis

By: Jewel Washington B.S., Dr. Anna Wright, PhD



Background

- Alcohol dependence (AD), a form of alcohol use disorder (AUD), is shown to have a genetically-linked heritability factor that slightly varies in percentage across racial/ethnic groups.¹
- Still, there is limited data that equally assesses risk profile differences for AUD across racial groups.²
- Protective mental health factors for AUD (optimistic attitude, resilience, conscientiousness) have been identified, but are understudied, especially in emerging adults.^{3,4}



Objectives

The aim of the study is to:

- Identify how sociobehavioral factors interact with one's genetic risk of alcohol dependence and how this interaction may differ by race/ethnicity
- Hypothesize that the interaction between one's level of genetic risk for AUD and protective factors would be different for those of European ancestry than those of African ancestry

Methods

Secondary data analysis of longitudinal study

- Spit4Science - VCU Database

Sample

Population demographic: First semester freshman at VCU

European Ancestry

Age: 18-25.6 yrs with avg of 18.5 (SD = 0.44 years)
N = 4574 participants
Gender: 34% male, 49% female, 17% missing

African Ancestry

Age: 18-24.6 yrs with average of 18.45 (SD = 0.41)
N = 2037 participants
Gender: 23% male, 57% female, 20% missing

Measures

- Demographics: Age, Gender, Race/Ethnicity
- Genetic SNP sampling determined PRS for Alcohol Dependence
- Personality (Big 5 Inventory: Extraversion, Neuroticism, Openness)
- Trait Resilience: Difference between actual and expected internalizing following trauma
- AUD symptoms: scored based on DSM-IV Alcohol Abuse Symptoms

Methods cont.

Analyses

- Correlation examined relation between all variables
- An interaction term for PRS with each of the protective factors (Extraversion, Neuroticism, Openness, Trait Resilience) was created
- Direct and interaction effects for the protective factors and PRS for AD on AUD symptoms were explored in Multiple Regression analyses, controlling for age and gender.
- Separate regression models were run for European and African ancestry groups
- Gender included as covariate in each model

Results

	Gender	Age	Polygenic Risk Score for Alcohol Dependence	Extraversion	Neuroticism	Openness	Resilience	Alcohol Use Disorder Symptoms
Gender	-	-.081**	-0.017	.057**	0.042	-0.012	0.029	-0.087*
Age	-.075**	-	0.010	0.333	-0.006	0.022	0.027	-0.021
Polygenic Risk Score for Alcohol Dependence	0.002	0.022	-	-0.039	.059*	0.035	-0.019	-.122**
Extraversion	0.024	-0.001	0.010	-	-.128**	.124**	.219**	0.073
Neuroticism	0.024	0.008	-0.026	-.098**	-	-.090**	-.467**	0.025
Openness	-0.019	-0.015	0.001	.118**	-0.018	-	-0.047	-0.057
Resilience	-0.004	0.006	0.015	.130**	-.518**	-.044*	-	-.078*
Alcohol Use Disorder Symptoms	0.037	-0.002	0.025	.037**	.052*	0.038	-.096**	-

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

African ancestry correlations displayed above the diagonal axis.
European ancestry correlations displayed below the diagonal axis.

European Ancestry Risk Factors:

- Extraversion $t(1661) = 3.045, p = 0.002, B = 0.035$
- Neuroticism $t(1656) = 2.075, p = 0.038, B = 0.024$

European Ancestry Protective Factors:

- Trait resilience $t(1561) = -3.965, p < 0.001, B = -0.144$

African Ancestry Risk Factors:

- Being of male gender varied in significance [$t(581) = -2.616, p = 0.009, B = -0.285$; $t(617) = -2.29, p = 0.022, B = 0.241$]

African Ancestry Protective Factors

- Trait resilience $t(577) = -1.936, p = 0.053, B = 0.144$

Discussion

Unique risk factors were depicted in European vs African Ancestry groups; however, resilience was identified as protective for both subgroups through the correlation matrix.

It is interesting to note that in the African Ancestry (AA) model, PRS for alcohol dependence was inversely correlated with AUD symptoms. Such findings were intriguing as past literature often equates familial history of alcohol use disorders as predispositions for AUD symptoms in offspring.⁵

Additionally in the AA model, being of male gender was found to be a correlative risk factor. Such findings felt confirmatory as past literature often correlates male gender with more alcohol dependent behaviors and is especially seen in African-American subsample groups.⁵

Conclusions

- Unexpected AA model findings (inverse correlation of AUD symptoms with PRS) prompt the need for further investigation in ethnic differences
- Hope to inspire more racially diverse clinical research for alcohol use disorders to improving treatment plans for minority communities struggling with alcohol dependence



Acknowledgments

I would like to thank the National Institute of Drug Abuse and AACAP's Campaign for America's Kids for funding this project. I would also like to thank the S4S team for sharing their data for this project.

References

- Brick, L. A., Keller, M. C., Knopik, V. S., McGueary, J. E., & Palmer, R. H. C. (2019). Shared additive genetic variation for alcohol dependence among subjects of African and European ancestry. *Addiction Biology*, 24(1), 132-144. <https://doi.org/10.1111/adb.12578>
- Vlodavsky, O., Schwarze, M., Rumpf, H. J., Meltzer, F., & Pawlis, S. (2017). Protective mental health factors in children of parents with alcohol and drug use disorders: A systematic review. *PLoS one*, 12(6), e0179140. <https://doi.org/10.1371/journal.pone.0179140>
- Haeny, A. M., Gueorguieva, R., Jackson, A., Morean, M. E., Krishnan-Sarin, S., DeMartini, K. S., Pearson, G. D., Antioeovic, A., Krystal, J. H., & O'Malley, S. S. (2021). Individual differences in the associations between risk factors for alcohol use disorder and alcohol use-related outcomes. *Psychology of addictive behaviors* : journal of the Society of Psychologists in Addictive Behaviors, 35(5), 501-513. <https://doi.org/10.1037/adb0000733>
- Listebath, S., Vysotski, B., Waldhoer, T., Gmeiner, A., Vysotski, S., Wippel, A., ... & König, D. (2021). Hazardous alcohol consumption among older adults: A comprehensive and multinational analysis of predictive factors in 13,351 individuals. *European Psychiatry*, 64(1).
- Haeny, A. M., Gueorguieva, R., Jackson, A., Morean, M. E., Krishnan-Sarin, S., DeMartini, K. S., Pearson, G. D., Antioeovic, A., Krystal, J. H., & O'Malley, S. S. (2021). Individual differences in the associations between risk factors for alcohol use disorder and alcohol use-related outcomes. *Psychology of addictive behaviors* : journal of the Society of Psychologists in Addictive Behaviors, 35(5), 501-513. <https://doi.org/10.1037/adb0000733>



AACAP

Jeanne Spurlock, MD, Research Fellowship in Substance Abuse and Addiction for Minority Medical Students

Supported by the National Institute on Drug Abuse (NIDA) and
AACAP's Campaign for America's Kids (CFAK) Fund

You are required to complete **seven programs** during the Annual Meeting. See below:

1. Choose **one** (of two) **Life Member** sponsored session(s):

Tuesday, Oct. 18 | 4:45 - 6:15 PM

Medical Students Residents and Fellows: Meet Life Member Mentors at the 2022 AACAP/CACAP Annual Meeting
or

Thursday, Oct. 20 | 2:30 - 4:30 PM

Clinical Perspectives 47 | **Life Members Wisdom Clinical Perspective**
A Lifetime of Lessons Learned: Careers in Child and Adolescent Psychiatry

2. **Wednesday, Oct. 19 | 4:15 - 6:00 PM**

Karl Menninger, MD, Plenary (Opening Plenary)

3. **Thursday, Oct. 20 | 1:00 - 2:30 PM**

Junior Research Scholar Lunch (Invite Only)

4. Choose **one Diversity and Culture Committee** sponsored session.

5. Choose **one Substance Use Committee** sponsored session.

Complete **one additional required session** of your choice; may include a program in which you are monitor or serving in a chair, discussant or co-presenter role, or other programming of choice from the program schedule.

OTHER INFO

Also consider...

- Honors Presentations – dates and times vary throughout the week.
- New Research Posters

CHECK OUT THESE COMMITTEE EVENTS!

- Committee on Medical Students and Residents