

# Effects of Adverse Childhood Experiences and Meta-Cognition on Collegiate Study Habits



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## Introduction

### Background

Adverse childhood experiences (ACE) have an impact on the individual in the moment, of course, but for many it impacts them for days, weeks, months, and even years to come. How, if at all, do these ACEs affect one's meta-cognition on their collegiate study habits?

We predict, based on back literature that discussed correlations between ACEs and academic performance, that having one or more ACEs, an individual's understanding of metacognition, and their demographic factors will impact an individual's study habits. This is specifically in relation to a period of online or virtual learning.

Our group plans to analyze our data by using a multiple regression analysis to determine the degree to which ACEs, meta-cognition, and demographics create variance in study habits.

### Hypothesis

We expect to see significantly higher study habits scores, based off the Study Habits survey, in individuals with few or no ACEs compared to individuals with higher ACE scores, based off the Adverse Childhood Experiences survey.



(Centers for Disease Control and Prevention, 2020)

## Method

### Participants

- A total of 92 participants used the SONA pool and social media post to platforms such as Facebook and UMW Canvas to complete the survey. 67 participant's data were complete and consented to their data being used in the study.
- 35.3% of participants were male, 61.2% were female, and 3.5% identified as neither male nor female.
- 73.5% of participants identified as White/Caucasian, 10.3% identified as Black/African American, 2.9% identified as Asian, 7.4% as Hispanic/Latin, and 4.4% identified with another race
- Any student attending the University of Mary Washington's PSYC 100 class received credit toward their general psychology experiment participation requirement. All experimental work compiled with relevant ethical guidelines and was approved by UMW's Institutional Review Board

## Method

### Materials

Participants will be able to take the survey at the time and place of their choosing, using their own electronic device. Surveys were entered into Qualtrics:

Each participant was presented with the following instruments:

- Adverse Childhood Experiences (ACE), collected from the Center for Disease Control and Prevention**

Answer 10 "yes" or "no" questions on the ACE inventory that pertain to one's childhood experiences

*Sample question:* "Did you live with anyone who was depressed, mentally ill, or suicidal?"

- Meta-Cognition Inventory (MAI), collected from Harford Community College**

A 30 "true" or "false" Meta-Cognitive Awareness Inventory that will assess the extent of participants' recollection of their awareness.

*Sample question:* "I understand my intellectual strengths and weaknesses"

- Study Habits Survey (SHS), collected from Texas A&M University**

Is composed of 50 "yes" or "no" questions that result in a score for each of the six categories on the SHS: Concentration, remembering, organizing time, studying a chapter, listening and taking notes, taking tests, and motivation

*Sample question:* "I set aside a regular time for studying every day"

### Procedure

- Participants were briefed with an adult consent form.
- Upon accepting the conditions of the consent form, participants were prompted to begin the survey.
- The participants were prompted to fill in open-ended items on demographics (i.e. school year, age, gender, modality of learning such as in person learning, hybrid learning, and online learning, and socioeconomic status).
- The participants were prompted to complete survey inventories on adverse childhood experiences, meta-cognitive awareness, and study habits.
- The participant's approximated time to complete the entire survey was less than 30 minutes.
- Participants were thanked and debriefed on the purpose and rationale of the study.

## Results

A multiple regression analysis was carried out to determine the variance created by predictor variables demographics, ACE scores and metacognition on the criterion variable, study habits. The results were not statistically significant  $F(7, 59) = .814, p > .05, R^2 = .088$ . The analysis shows that none of the predictor variables are significant: Age ( $\beta = .123, t(67) = .703, ns$ ), Gender ( $\beta = .067, t(67) = .489, ns$ ), Race ( $\beta = -.141, t(67) = -1.080, ns$ ), Class ( $\beta = -.052, t(67) = -.295, ns$ ), SES ( $\beta = -.054, t(67) = -.395, ns$ ), ACE scores ( $\beta = .107, t(67) = .758, ns$ ), and Metacognition scores ( $\beta = .225, t(67) = 1.706, ns$ ). Having found nonsignificant results in the multiple regression, a bivariate correlation was run for each of the predictor variables (demographics, ACE scores, and metacognition. In the bivariate correlation for metacognition, metacognition was statistically significant  $F(1, 65) = 1.910, p < .05, R^2 = 0.29$ .

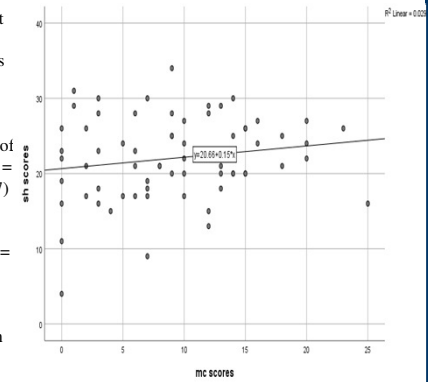


Table 1  
Descriptive Statistics

	Mean	Std. Deviation	N
SH Scores	22.03	5.65	67
Age	1.84	1.136	67
Gender	1.67	.533	67
Race	1.57	1.44	67
Class	1.61	1.029	67
Econstant	1.52	.841	67
Modality	1.69	.499	67
ACEs Scores	8.00	2.153	67
MC Scores	9.10	6.233	67

Table 2  
Multiple Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
	B	Std. Error	$\beta$	t	Sig.	Lower Bound	Upper Bound
Age	.17785	.5352	.3323	.002	.705	28.495	
Gender	.403	.857	.123	.703	.485	-1.112	2.317
Race	-.700	1.433	-.067	-.489	.627	-2.168	3.569
Class	-.686	.635	-.141	-1.080	.285	-1.956	.585
Econstant	-.281	.953	-.052	-.295	.769	-2.188	1.626
Modality	-.360	.912	-.054	-.395	.694	-2.188	1.464
ACEs Scores	.277	.365	.107	.758	.452	-.454	1.007
MC Scores	.201	.118	.225	1.706	.093	-.035	.437

## Discussion

### Analysis

No significant effects were found in the multiple regression analysis. In a bivariate correlation, the meta-cognition variable was found to be statistically significant. The metacognition predictor variable was based on previous literature that found a significant effect of college students' understanding of metacognition on study habits (Khan et al., 2019).

### Limitations

Distracting factor with participants completing the meta-cognition and study habit survey may have been limited by amid COVID-19. Attrition occurred during the study, 25 participants were removed due to retracting data or failing to successfully complete the informed consent. One limitation of these results were the effects of class modality during the 2020 pandemic on study habits.

### Future Research

Future research may investigate the impact various class modalities have on Collegiate study habits. In future research, our group would recommend using the entire metacognition questionnaire instead of modifying the questionnaire.

## References

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