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The Relationship Between Adverse Childhood Experiences, Resilience Factors and Academic Performance in College Students

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Abstract

Adverse childhood experiences (ACEs) are linked to many different chronic illnesses and mental health issues. Previous research suggests that resilience factors may mitigate negative outcomes associated with ACEs. The purpose of this project is to investigate the relationship between ACEs, resilience, and grade point average (GPA) in college students. Participants completed an online survey consisting of questions from the Behavioral Risk Factor Surveillance System (BRFSS) Adverse Childhood Experience (ACE) Module, the Resilience Scale for Adults (RSA), and a question assessing current grade point average and age. Correlation analysis was used to assess the association between the measured variables. The results of this study suggest that there is a positive correlation between adverse childhood experiences and GPA. This relationship may reflect unaccounted for resilience factors related to the pursuit of higher education and academic achievement.

Keywords: adverse childhood experiences, resilience, academic achievement

The Impact of Adverse Childhood Experiences and Resilience on Academic Performance in

College Students

The effects of adverse childhood experiences (ACEs) have been a popular topic in psychological research. ACEs can be defined as physical, emotional, and sexual abuse, neglect, household dysfunction, and other forms of traumatizing experiences in childhood. The first study done on ACEs by Felitti et al. (1998) discovered that there is a strong relationship between ACEs and poor health in adulthood. ACEs are thought to increase the likelihood of developing chronic illnesses like heart disease, cancer, diabetes, etc. (Felitti et al., 1998). ACEs also may impact other aspects of life such as academic performance (Peterson & Morfoot, 2022). Children who experience ACEs are thought to be at a higher likelihood of lower GPA and not attending secondary education (Stewart-Tufescu et al., 2022). This impacts the quality of life during the aging process. Research on ACEs suggests that resilience factors may mediate the negative impact of ACEs (Kalia et al., 2020).

Research has been mixed on ACEs and academic performance. Gresham and Karatekin (2022) discovered that many factors influence the relationship between these two variables. Some examples of this are intrinsic motivation, psychological distress, first-generation status, parental education, subjective childhood socioeconomic status, and standardized test scores. During the statistical analysis process, factoring for these outside variables dissolves the association that can be seen between ACEs and lower academic performance. Merians et al. (2019) discovered similar effects on academics. This study suggests that students with higher ACEs performed just as well as students without them. Subotic et al. (2018) found similar results but included that ACEs may lead to negative mood states. These mood states may impact GPA. Peterson and Morfoot (2022) corroborated these results. These researchers discovered that

students with higher ACE scores experience more negative mental health issues, which may lead to an impact on academics as well as other experiences in school like relationships with peers and teachers.

Doi et al. (2020) argues that ACEs in childhood, specifically the death of a parent, are predictors for lower academic performance in children. Vervoort-Schel et al. (2021) mentions that ACEs are associated with cognitive functioning as well as cause academic issues and learning disabilities. Kalia et al. (2021) researched this question on the college population. This study mentions that the population may be influenced because students with higher ACEs may not attend college. The results of this study suggested that college students with higher ACEs had reduced cognitive flexibility, which affects the ability to adapt thoughts and behavior to new environments.

Subotic et al. (2018), Kalia et al. (2020), Peterson and Morfoot (2022), and Merians et al. (2019) all mention the importance of resilience in mediating the effect of ACEs. The consensus is that if resilience can be built, the negative impacts of ACEs will be lessened. Kelifa et al. (2020) investigated the role of resilience on the negative impacts of ACEs on college students. This study suggests that if resilience is developed, the effects of depression are lessened. Banyard et al. (2004) focused on resilience in college adjustment. This study advocated that building resilience in terms of internal locus of control, higher levels of social support, and finding meaning for a traumatic event leads to better adjustment. These corroborate the speculations of Subotic et al. (2018), Kalia et al. (2020), Peterson and Morfoot (2022), and Merians et al. (2019).

The present study seeks to assess the relationship between ACEs, resilience (defined as personal strength, meaning-making, family support, and social support), and academic

performance in college students. Based on the results of previous research, the prediction for this project is that there will be a positive correlation between resilience factors and academic performance. This project builds on previous research and attempts to look at the effects of ACEs on the young adult population. This population is under-investigated in research on this topic. Understanding the impacts of ACEs and resilience is important for creating supportive academic environments for college students to succeed.

2. Methods

2.1 Participants and Procedure

The current study recruited 50 participants of at least 18 years of age. The participants were recruited using the university SONA system, which allows students to participate in research studies and receive course credit.

This study utilizes a correlational research approach to evaluate the relationship between three continuous variables: adverse childhood experiences (i.e., the Behavioral Risk Factor Surveillance System (BRFSS) Adverse Childhood Experience Module), resilience (i.e., the Resilience Scale for Adults; RSA), and self-reported grade point average. These measures were uploaded to Qualtrics, an online survey tool, and advertised using SONA, a research tool used to recruit participants for university-sanctioned research projects. Both platforms are encrypted and designed to protect both the researchers' and participants' data. Participants accessed these surveys through their own devices.

2.2 Materials

2.2.1. Age Confirmation

This question is designed to make sure all participants know that consent to participate requires them to be at least 18 years of age (e.g., "What is your current age in years?").

2.2.2. Behavioral Risk Factor Surveillance System (BRFSS) Adverse Childhood Experience Module

The BRFSS ACE Module contains 11 questions that evaluate experiences involving household mental illness, household substance abuse, incarceration of a family member or family members, parental separation or divorce, household physical violence, physical abuse, emotional abuse, and sexual abuse. Questions 1-4 assessed household mental illness, household substance abuse, incarceration of a family member or family members (e.g., "Did you live with anyone who was depressed, mentally ill, or suicidal?"). The participants may answer yes, no, don't know/not sure, or refuse to answer. Question 5 assessed parental separation or divorce (e.g., "Were your parents separated or divorced?"), with response options being yes, no, parents not married, don't know/not sure, and refuse to answer. Questions 6-11 assessed household physical violence, physical abuse, emotional abuse, and sexual abuse (e.g., "How often did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up?"). Response options to this question were never, once, more than once, don't know/not sure, and refuse to answer. Participants were assigned one point if the answer to any question was yes/once/more than once, or zero points if they answered no, don't know/not sure, or refused to answer.

Subotic et al. (2018) and Merians et al. (2019) employed the BRFSS ACE Module to assess ACE scores. The BRFSS Adverse Childhood Experience (ACE) Module is an empirically validated questionnaire created by the Centers for Disease Control in 2009 (Ford et al., 2015). Ford et al. (2015) conducted a study to access and validate the BRFSS ACE Module. The results of this study suggest that this questionnaire accurately assesses levels of exposure to ACEs and is empirically valid across gender and age (Ford et al., 2015).

2.2.3. Resilience Scale for Adults

The RSA contains 33 questions divided into six sections. These sections address personal strengths and self-perception, perception of the future, structured style, social competence, family cohesion, and social resources. Questions 1-6 assessed personal strengths/perception of self. Questions 7-10 assessed personal strength/perception of the future. Questions 11-14 assessed structured style. Questions 15-20 assessed social competence. Questions 21-26 assessed family cohesion. Questions 27-33 assess social resources. For each question, a statement was presented, along with five options catered to the question (e.g., "When something unforeseen happens… (1) I always find a solution, (2) Align more with option 1, (3) neutral, (4) Align more with option 5, (5) I often feel bewildered"). The participants were allotted the points correlating to the answer chosen (i.e., one point for option one, two points for option two, etc.).

The RSA is an empirically validated scale published in 2003 (Friborg et al., 2003). According to Friborg et al. (2003), the validity of this scale is "adequate," and the reliability is "satisfactory." The RSA is the most stable scale in terms of test-retest and evaluates social and family protective factors (Morote et al., 2017).

2.2.4. Self-report Grade-Point-Average

This question assesses current academic standing at the University of Montana (e.g., "What is your current grade point average?").

2.3. Analysis Strategy

The primary analysis, which assesses the relationship between ACEs, resilience, and academic performance, uses correlation analysis. Pearson correlation coefficient (i.e., PEARSON function) in SPSS was used to evaluate the participants' data from the measured variables.

Results

Table 1 presents the descriptive statistics and correlational data for resilience factors, ACEs, and GPA. According to Giano et al. (2020), 57.8% of individuals in the United States experience at least one adverse childhood experience, whereas 2.3% of the population experiences six adverse experiences and 1.2% of the population experiences seven ACEs. The mean reported ACEs scores (M_{ACE} = 6.9; SD = 1.51) fall between six and seven, suggesting the participants in this study have a high number of ACEs. The mean reported RSA scores (M_{RSA} = 97.94; SD = 4.77) suggest that the participants have developed a moderate level of resilience factors. This interpretation is based on a study conducted by Morote et al. (2017). The researchers of this past study mentioned higher scores reflect higher levels of resilience. Since the mean reported scores fall around approximately 59% of the maximum points available, participants have a moderate level of resilience. The mean reported GPA (M_{ACE} = 3.51; SD = 0.43) suggests that the participants in this study are high academic achievers.

Correlation analysis showed a positive correlation between ACEs and GPA ($r(47)$ = -.384, p = .007). This result suggests that as ACEs increase academic performance does as well. Correlation analysis found that there was no statistically significant relationship between resilience factors and ACEs ($r(49)$ = .166, p = .250) and resilience factors and GPA ($r(47)$ = -.053, p = .720). These results suggest that ACEs are related to GPA.

Tabel 1. Pearson correlation among RSA, ACEs, GPA

Variable	1	2	3	*SD*
1. RSA	--	.166	-.053	4.77
2. ACEs		--	.384*	1.52
3. GPA			--	.43

M	97.94	6.90	3.51

Note. M=Mean: SD=Standard Deviation. *p < .05.

Discussion

The results of the current study showed that there is a statistically significant relationship between ACE scores and GPA. These results suggest that an increased number of reported ACEs is associated with higher reported GPA. These results contradict the original hypothesis of this study, as well as previous research done on the relationship between academic performance, resilience, and ACEs. For example, a study conducted by Kalia et al. (2020) found that there is a mediating effect that takes place when resilience skills are developed. However, the researchers discuss that mixed results found in research could be due to individuals with high ACEs and low resilience not attending college or secondary education.

The results of the Subotic et al. (2018) study indicate that there is a relationship between resilience factors and GPA. A study done by Kelifa et al. (2020) researched this concept. The result of that study suggested that building resilience lessens the effect of depression on negative mood states. Resilience factors are thought to mediate the negative impacts of ACEs on mental health, which could be responsible for the relationship between resilience factors and GPA. Peterson and Morfoot (2022) had similar findings for this possible hypothesis.

Considering that the participants in the current study had a moderate level of resilience (97.94), a high level of ACEs (6.9), and a high academic achievement (3.5073), it could be that a stivinge for academic success is a form of resilience, which is not factored into the RSA. This could be responsible for the lack of relationship being seen between resilience, ACEs, and GPA, and the relationship that can be seen between ACEs and GPA.

The current study recruited participants using SONA, which pools participants from undergraduate psychology classes offered on campus. Although anonymous, the participants are most likely predominantly psychology majors, which makes the sample not generalizable to people outside of psychology students at the University of Montana. All data is self-reported; therefore, the lack of relationship being seen between resilience factors, ACEs, academic performance, and the relationship between academic performance and ACEs could be due to participant manipulation, or inaccurate representation of resilience, GPA, and ACEs.

Subotic et al. (2018) and Peterson and Morfoot (2022) suggest that a possible confounding variable could be the impact of resilience factors and ACEs on mental health. Mental health issues can cause emotional swings, which may impact comprehension of the material being learned. However, the participants in the study had a high grade-point average and moderate resilience score, which contradicts the idea that mental health is negatively impacting the results of the current study.

Another potential confounding variable to consider is socio-economic status (SES). Lower SES has been previously associated with a higher risk of maltreatment (Walsh et al., 2019) and increased dropout rates (APA, 2017). Considering these variables impact access and dedication to secondary education, this could be the reason the sample data showed an overrepresentation of high grade-point-averages and moderate resilience, and it would account for Kalia et al. (2020) hypothesis that individuals with high ACE scores and lower resilience tend to not attend college or secondary education of any kind.

Future research should incorporate replications of this study and others like it. The possible confounding variables mentioned in this study should be controlled to mediate possible effects on future results. Assuming the results are accurate, future research should investigate a

motivation for academic success as a resilience factor and resilience-building techniques on specific adverse experiences and outcomes. This should be done with a wide variety of ages, genders, races, cultures, and societal classes. Future research on ACEs should include research on global traumatic events like COVID-19 as an adverse childhood experience.

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