5-2022

The Relationship Between Adverse Childhood Experiences and Academic Performance and Student Self-Perception

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The Relationship Between Adverse Childhood Experiences and Academic Performance and Student Self-Perception

By

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An Undergraduate Thesis Submitted in Partial Fulfillment

of the Requirements for the

University Honors Scholars Program

East Tennessee State University

Emily Brown 4/14/2022

Emily Brown Date

Julia Dodd 4/14/2022

Dr. Julia Dodd, Thesis Mentor Date

Abstract

Researchers have explored the effects of Adverse Childhood Experiences (ACEs) on academic performance from elementary years to young adulthood. In this study, we explored the relationship between ACEs and academic performance in high school and academic student self-perception, and the further role that community or high school extra-curricular involvement may play in this relationship. In this study, we hypothesize that participants with higher ACEs will have poorer academic performance than those with lower ACEs. Secondly, we hypothesize that students with higher ACEs will have a lower academic self-concept than students with lower ACEs. Thirdly, we hypothesize that community or extra-curricular involvement in high school will buffer the effect of ACEs on GPA. Finally, we hypothesize that this extra-curricular involvement will also buffer the effect of ACEs on academic self-concept. Using surveys through the REDCap platform, data was collected from 75 East Tennessee State University students above the age of 18. Using SPSS software, we ran correlations to determine the relationship between ACEs on both GPA and academic self-concept. There was no significant correlation between ACEs and GPA or ACEs and academic self-concept scores. Moderation was conducted through SPSS PROCESS to determine whether total involvement could moderate the effects of ACEs on GPA or academic self-concept. There was no significant moderation in the model predicting GPA. In the model predicting academic self-concept, however, ACEs did emerge as a significant predictor of academic self-concept, although extra-curricular involvement did not. Further, extra-curricular involvement did emerge as a significant moderator, such that the negative relationship between ACEs and academic self-concept was no longer significant at mean or high levels of extra-curricular involvement. In other words, ACE scores only predicted poorer academic self-concept for individuals with low levels of extra-

curricular involvement. Results and limitations suggest future research on the relationship between ACEs on academic self-confidence and total extra-curricular involvement.

Acknowledgements

I would like to express my greatest appreciation for my thesis advisor, Dr. Julia Dodd. She has provided constant guidance, time, and feedback on this project. This study would not have been possible without her consistency. I would also like to thank graduate student Hope O'Neill for her help and assistance in creation of the study and collecting data. Both Dr. Julia Dodd and Hope have been gracious with their time, energy, and support. I cannot thank them enough for the effort they have poured into myself and this thesis.

I would also like to thank Dr. Karen Kornweibel for supporting me throughout this thesis and my overall undergraduate experience. For four years, Dr. Kornweibel has pushed my University Honors Scholars class to become the best version of themselves academically and emotionally. I would not be where I am today without the knowledge and guidance she has provided us.

Chapter One

Introduction

Adverse Childhood Experiences (ACEs) are potentially traumatic events that occur in an individual's life before the age of eighteen (Felitti et al. 1998). These events consist of various traumatic situations including both verbal and physical abuse, sexual trauma, poverty, and parental divorce. Adverse childhood experiences are some of the most studied predictive factors in child psychology. These experiences are often theorized to have detrimental effects on adult happiness, health, and perseverance (Hughes et. al., 2016). While these factors have been studied regarding adult wellness, there are many gaps in the literature to understand how adverse childhood experiences are related to high-school adolescents.

The purpose of schools is to provide well-rounded educational training to children of all races, ethnicities, sexual orientations, socioeconomic statuses, and more, while also maintaining themselves as a safe space for everyone. Each high school in the United States is expected to meet certain educational standards to prepare its students with certain knowledge and skills so that they are able to successfully enter the workforce or academic college courses, and to ultimately become well-rounded, contributing members of society (corestandards.org, 2022).

While the COVID-19 pandemic has raised awareness of the importance of socialization in schools for mental health (Scarpetta et. al., 2021), the important relationship between mental health and academic success has received less attention. The United States has seen increasing emphasis on Clinical Mental Health Counselor partnerships with schools in reaction to the effects of COVID-19 (Pincus et. al., 2020), but it is necessary to be proactive when dealing with trauma, of all kinds, in children. This paper serves to understand the relationship between

childhood trauma and school success to support the trauma-informed teaching lens and promote extra-curricular and community involvement.

As mentioned, high school-aged adolescents are the upcoming leaders of society. Throughout their schooling, however, high schoolers are subject to many social pressures and stressful situations. Literature has studied these stressors, such as underage alcohol abuse, sexual trauma, parental negligence, and more (Crouch, 2018). These stressors may affect school performance, relationships, community involvement, and subsequently one's ability to receive financial scholarships to attend college (Hardcastle, 2018). Understanding how ACEs can affect adolescent academic success is crucial to understanding what support is needed in schools. This support could entail mentor-student programs, a diverse selection of extra-curricular activities, more community outreach programs, and more.

Furthermore, ACEs may affect the way an adolescent views their academic experience. The role of academic self-concept impacts how a student will perceive and evaluate their academic abilities (Marsh & Rhonda, 2002). Having a positive academic self-concept is foundational to a student's academic success. Students with a high academic self-concept exhibit better academic performance and resilience, whereas students with a lower academic self-concept have a more difficult time overcoming academic obstacles (Zarecki, 2020). Taken together, results of these previous studies suggest that adolescent student self-perception can affect the amount of work students are motivated to put into their education, their future career goals, and their overall success.

Research on ACEs regularly highlights the term "resilience". Resilience is the ability to successfully adapt and persevere when faced with stressors or adversity (Sisto et. al., 2019). Previous research has identified that resiliency can be formed through strong relationships with

parents, guardians, teachers, or mentors (Southwick et. al., 2010). Resilience can also be cultivated in other ways, too, including through inclusion in supportive communities, schools, sports teams, and other group-based activities (Kellar,2019). Understanding whether resilience can be sparked in high school students through involvement in community or school extra-curricular activities can help shape the way schools utilize a trauma-informed framework.

The goal of this study is to understand the relationship between Adverse Childhood Experiences and student self-perception, as well as academic performance. This was studied using a survey given to East Tennessee State University students over the age of eighteen. The hypotheses guiding this study are:

H1: Students with higher ACE scores will have poorer academic performance, as measured by high school GPA, than those with lower ACE scores.

H2: Students with higher ACE scores will have a lower academic self-concept than students with lower ACE scores.

H3: Extra-curricular involvement in high school or the community will buffer the effect of ACEs on GPA, such that there will be a weaker relationship between ACEs and GPA for students with more extra-curricular involvement.

H4: Extra-curricular involvement in high school or the community will buffer the effect of ACEs on academic self-concept, such that there will be a weaker relationship between ACEs and academic self-concept for students with more extra-curricular involvement.

Chapter Two

Literature Review

This study seeks to understand the relationship between ACEs and high-school academic performance as well as student self-perception. Additionally, this study will explore whether high school extracurriculars or community involvement moderates the effects of ACEs on these outcomes. Additional factors that will be controlled for are race, ethnicity, socioeconomic status, sexual orientation, and gender identity. The foundational research in this literature review will therefore be focused on previous studies concerning ACEs in school-aged learners, different covariate groups, and extra-curricular based resilience.

ACEs and Academic Achievement

Adverse Childhood Experiences have been found to correlate with academic achievement in elementary school-aged learners, such that a higher ACEs score was associated with greater rates of academic failure, attendance problems, and behavioral issues (Blodgett & Lanigan, 2018). Contextually, this association is unsurprising, for a student who is deemed at-risk for childhood trauma may not be able to give full attention or dedication to standardized testing, homework completion, or socially accepted behavior regulation. Research also provides insight that higher ACE scores correlate with school problems in more than one area. These areas include but are not limited to both attendance and academic failure (Blodgett and Lanigan, 2018).

This correlation in elementary school children raises questions on whether this low academic performance, decreased school attendance, and behavioral management will continue to affect students' school experience in their teenage years. Research further studies how adverse childhood experiences relate to aforementioned absenteeism, behavioral problems, and overall

academic achievement along with added retention and dropout rates. Studies have found that ACEs do negatively impact the school experience and correlate with low-retention rates and academic performance due to their long-lasting effect on human development (Carlson, 2019). These studies, however, have found that educational staff can serve as guidance and alter the negative effects of ACEs, overall indicating that school systems have the tools necessary to help at-risk children thrive in educational settings (Carlson, 2019).

How Mindset Predicts Success

Academic self-concept refers to an individual's perception about their level of competency within the academic realm (Ferla et al., 2009). This self-concept is theorized to arise though self-knowledge and evaluation of values through experiences with the interpretation of one's academic environment (Eccles, 2005). In other words, the way a student views their ability to achieve impacts their levels of achievement. Those who view themselves as competent students along with those who enjoy learning will overall have higher performance levels than those who have a lower self-concept (Matovu, 2014). These findings are important when understanding the relationship between adverse childhood experiences and academic performance. Childhood trauma can induce feelings of insecurity and academic confidence is important to academic success (Matovu, 2014).

Research has also investigated the predictors of college success in community colleges throughout the United States. This research has used ACEs as a predictor to understand how they can negatively impact academic achievement in college level courses. What they have found is that ACEs on their own have less effect on college-level achievement than a strong sense of safety and support does (Zarecki, 2020). This sense of safety and support throughout the

individuals' college experience is said to motivate the students to perform academically and increase online class retention rates (Zarecki, 2020).

While these findings do not show ACEs individually affecting college success, they show that the promoters of resiliency such as loving, supportive figures do positively impact the ability to succeed in collegiate experiences (Zarecki, 2020). This finding is important to understanding how a supportive environment can positively alter the trajectory of an individual's experience.

Other literature is mixed on whether ACEs alone decrease academic performance. Multiple studies have found that ACEs are predictors of negative academic performance due to their correlation with a lack of support at home (Nicholson, 2021). These mixed results are why it is necessary to study the true interaction between ACEs and academic performance with other factors such as the academic self-concept scale.

Furthermore, these findings involving the self-concept scale and supportive environments are important to further studies seeking to improve the educational system. Positive mindsets on academic ability will help increase student success in schools just as supportive school environment scan increase retention rates and academic abilities. Knowing how to increase student academic self-concept and bettering the support system inside classrooms can help individuals who suffer from adverse childhood experiences gain confidence and overall academic success.

Extra-curricular Activities Promoting Resiliency

Previous research has shown that resilience can help mitigate the effects of adverse childhood experiences. Additional research has shown that caregivers or mentors can help promote this resilience (Southwick et. al., 2010), but a gap exists in the literature on other factors that may serve to promote resilience in high schoolers. Specifically, there is some reason to think

that involvement in high school extra-curricular activities or community involvement may be one such factor that promotes resilience in high schoolers with histories of adversity. Involvement in a group or community can increase accountability, interpersonal communication skills, and confidence (Kellar, 2019). Many students rely on their extra-curricular activities to more fully enjoy their student experience (Oweings, 1995), and this leads to the question if involvement in these different organizations can moderate the effects of Adverse Childhood Experiences exposure.

Research involving extra-curricular participation has focused primarily on recreational sports in youth (Norris, 2021). However, studies have also found that young children with high ACE exposure are less likely to be involved in recreational sports (London, et.al, 2021). With these results in mind, researchers have suggested that youth sports should operate within a trauma informed framework to support those individuals with ACEs exposure in sports (London, et.al, 2021). Nevertheless, there is still a lack of specific ways to get those in high-risk homes involved in sports, given that young children are reliant on supportive and active caregivers to get them into these programs.

While this research has served as a great framework for understanding sports-built resilience, it is still necessary to understand how other extra-curricular activities can affect teenage individuals. Most high schools offer free sports participation, service clubs, special interest groups, and other ways to become an involved student. Many communities also offer the same opportunities. Looking at these extra-curricular activities and comparing them in individuals with ACEs exposure can help identify if involvement can promote resilience. If moderation is found, high-schools and local communities can begin using the trauma informed framework within their organizations to better support students with ACEs exposure.

The Effect of ACEs on Different Groups

When considering the effects of ACEs on students, it is important to also consider other demographic factors that might interact with ACEs history to exacerbate negative outcomes. Therefore, in this study we will control for the effects of covariates such as race, family income, gender identity, and sexual orientation in our analyses. Therefore, an increased understanding of how marginalized populations are affected by ACEs exposure is warranted.

ACEs and Race

Racial group membership has been frequently examined in previous ACEs research (Slack, et. al., 2016). These studies have been prevalent in different public health and social justice related fields. Importantly, a robust body of research shows evidence of racial disparities in terms of adult health (Slack, et. al., 2016). Black individuals are more likely to self-report poor health in their adult life than white individuals (Slack, et.al., 2016). While these disparities are evident throughout different studies, findings have suggested that controlling for ACEs diminishes the disparities between racial groups on health (Slack, et. al., 2016). Relatedly, Black individuals also report higher ACEs exposure than many white individuals (Slack, et. al., 2016).

Since minority groups tend to have higher self-reports of ACEs exposure, one may imagine that they will be more affected in terms of academic performance and student self-perception than white individuals. Therefore, this study will control for the effects of race in statistical analyses in order to better examine the effects of ACEs and academic outcomes independent of the effects of race.

ACEs and Income

Socioeconomic status is another demographic of interest for many studies. Research has found that those with lower socioeconomic statuses report higher exposure to ACEs than do

those of higher socioeconomic statuses (Slack et.al, 2016). One study correlated this ACE exposure and socioeconomic status to study how individuals in different income groups self-report their general health (Slack et.al. 2016) This research suggested that those in lower income groups have less access to health care and quality medical attention, thus promoting less wellness in their adult life (Slack et.al., 2016).

This discussion of low-income groups and ACE exposure in combination with the reality of inequitable healthcare raises question on how ACE exposure and income can affect other avenues of their lives. One can hypothesize that those in lower income groups with higher ACE exposure may have less access to quality educational resources, thus affecting their overall academic success and student self-perception. Therefore, income will be another important factor to control for in statistical analyses.

ACEs and Gender Identity

There has been a gap in literature in understanding the effects of ACEs in transgender and gender nonconforming individuals (Schnarrs et al., 2019). Because of this research gap and recent social movements, researchers have been interested in comparing the effects of ACEs between transgender and cisgender individuals. These recent studies have found that transgender individuals have higher ACEs exposure than cisgender individuals (Schnarrs et al., 2019).

These findings have raised concern on how transgender individuals are being supported in terms of their mental health associated with ACEs. This is evident in many studies. One study found that when compared to cisgender populations, ACEs in transgender participants explained over 17% of the variance in mental health (Schnarrs et al., 2019). This percentage raises concern, for there is a need to understand how these negative mental health outcomes can be prevented. Research has shown that ACEs in transgender populations accounts for both health disparities

and obesity, but there is little research that understands how ACEs can affect their academic performance or self-perception.

Understanding how transgender individuals with ACEs exposure view themselves as students and perform academically can help predict their future success and overall adult well-being. Finding this correlation can suggest avenues for future research within this population to understand what support groups or programming needs to be implemented in various school settings. For the current study, however, we will statistically control for the effects of gender identity on academic outcomes, given the likelihood that it may be an influencing factor.

ACEs and Sexual Orientation

Similar to research regarding adverse childhood experiences and transgender individuals, there has been a gap in literature regarding ACEs and the LGBTQ+ community until recently. While research is being conducted on ACEs in the LGBTQ+ community, the primary focus involves health disparities when compared to heterosexual individuals (Blosnich & Andersen, 2014). This research, however, can help provide insight on the prevalence of experienced trauma that LGBTQ+ individuals face versus heterosexuals.

A study by Blosnich and Andersen surveyed LGBTQ+ individuals on their ACE inventory and mental distress. They found that LGBTQ+ individuals reported higher rates of adverse childhood experiences than their heterosexual peers while also reporting significantly higher levels of mental distress (Blosnich & Andersen, 2014). Their findings have raised concern for the mental health of LGBTQ+ individuals, as this high level of ACEs exposure could be correlated with depression, anxiety, substance abuse, and risk for suicide in their adult lives (Blosnich & Andersen, 2014).

Further research needs to be conducted to understand how ACEs affect LGBTQ+ individuals in their adolescent lives and both academic performance and student self-perception. Understanding how LGBTQ+ individuals with ACEs exposure or mental distress view themselves as a student and perform in an academic setting can help school systems provide support to close this gap. Given this emerging area of literature and the potential that sexual orientation has to influence academic outcomes, this will be the final demographic factor that we control for in statistical analyses.

Chapter Three

Methods

Research Approval

Before conducting research, study staff completed all the necessary human-subject paperwork to submit to the IRB at East Tennessee State University. The proposed research was granted exempt approval due to the lack of identifying information being asked of the adult participants. After approval, the research team began collecting data.

Participants

The participants of this study were college students enrolled at East Tennessee State University over the age of eighteen and physically present in the United States. The informed consent document was attached to the beginning of each online survey, and participants had to select "I agree" to provide their consent and continue on to the survey. The only people who received access to the responses were the primary investigator, co-investigator, and research assistant. The participant responses were confidential and anonymous.

Recruitment

To recruit the participants, the research team marketed the study on different online platforms. The principal investigator utilized the SONA Research System to offer students at East Tennessee State University academic extra credit for completion of the study. The other research team members sent out IRB-approved study advertisements via email to various on-campus student groups offering entry into a lottery drawing for one out of four $25 Amazon gift cards for completion of the study.

Measures

Demographics

Participants were asked demographic questions inquiring about their age, race, ethnicity, gender identity, sexual orientation, and parent education.

Academic Performance

Participants were asked to report their grade-point-averages in their high-school and college careers.

High School Extra-Curricular Activities

Participants were asked to report if they were involved in any community or school-based extra-curricular activities throughout their high school careers. Participants who were involved in extra-curricular activities were then prompted to report how many they were involved in on a scale from 1-5+.

Adverse Childhood Experiences

Participants were asked to respond to the adverse childhood experiences (ACEs) survey (Felitti et al., 1998). This survey included questions surrounding their childhood trauma such as household dysfunction, neglect, and abuse.

Academic Self-Concept Scale

Participants were asked to complete the Academic Self-Concept scale survey (Marsh & Rhonda, 2002), a measure used to evaluate how individuals view themselves as a student. This instrument consists of 40 questions that inquire about an individual's academic motivation, enjoyment, and confidence.

Procedures

Data was gathered via an online survey platform, ETSU REDCap. The survey consisted of four different sections. The first section asked demographic questions including their age, race, gender identity, sexual orientation, socioeconomic status, and if they were a first-generation

college student. The next section inquired about their high-school grade-point-averages, high-school extra-curricular and community involvement, and their current college grade-point-average. The next section had participants take the academic self-concept scale (Marsh & Rhonda, 2002). The last section had participants take the Adverse Childhood Experience survey. After providing their responses or declining to answer the questions, the data was confidentially stored on the ETSU REDCap platform. Upon completing the survey, participants were given the opportunity to enter in a lottery drawing to win one of four $25 Amazon gift cards by submitting their email addresses.

Chapter 4

Results

Descriptive Statistics

There were 75 students who participated in the study. The descriptive data received from this study was used to conduct statistical analyses through The Statistical Package for the Social Sciences (SPSS) platform. Participant mean age was 20.1 years. The sample was predominantly white (89.3%), female (85.3%), and heterosexual (76.0%). Most (66.6%) participants reported their parent educational attainment as a Bachelor's degree or higher. First generation college students made up only 18.7% of the sample. Household income was evenly distributed from less than $19,999 (16.0%) to $200,000+ (10.7%). Middle ranges were $20,000-49,000 (13.3%), $50,000-79,999 (13.3%), $80,000-99,999 (8.0%), $100,000-149,999 (16.0%), $150,000-199,999 (6.7%).

For the purpose of this study, descriptive statistics were conducted to determine the average high school grade-point-average (GPA) attained by the participants. This participant group (n = 73) was a high achieving sample with the mean GPA of 3.72 (see Table 1). Descriptive statistics of the participant population were also gathered for high school community or extra-curricular involvement. Of the responses provided (n = 75), the mean number of organizations the participants were involved in was 3.67 with the minimum at 0 and maximum at 12 (see Table 2). We also conducted descriptive statistics for the total number of ACEs the participants have faced. We would not expect ACEs to be normally distributed, and of reported responses (n = 75), participants had a minimum of 0 ACEs (24%) and a maximum of 9 ACEs (4%) with a mean of 2.6 (see Table 3). Descriptive statistics were lastly conducted for the

Academic Self-Concept Scales scores. Of the participant data (n = 75), scores ranged from 2.05 to 3.30 with a mean of 2.82 (see Table 4).

Inferential Statistics

The Statistical Package for the Social Sciences (SPSS) served as the platform for conducting all inferential statistical analyses. A Pearson correlation was run to examine the relationships between ACE scores, high school GPA, total involvement, and Academic Self-Concept scores. Of the correlations calculated, high school GPA and total high school involvement were statistically significant ($p < .01$ and $p < .05$, respectively). Both ACE scores and Academic Self-Concept scores were not significantly correlated with anything (see Table 5).

Next, a simple linear regression was calculated to predict high school academic performance based on ACE scores. Based on findings, ACEs were not a significant predictor of high school GPA ($p = .74$). A second regression was calculated to predict Academic Self-Concept scores based on ACE scores (see Table 5). Findings were again non-significant ($p = .62$).

Finally, moderation models were run exploring extra-curricular involvement as a moderator of the relationship between ACEs and academic outcomes, both high school GPA and academic self-concept. After running the model with all planned covariates (i.e., age, race, gender, sexual orientation, and parental education), non-significant covariates were dropped from the model to maintain the principle of parsimony. Only parental education was retained.

The model predicting high school GPA was significant overall, $F(4, 68) = 4.44$, $p < 0.01$, $R^2 = 0.21$; however, neither ACEs nor extra-curricular involvement significantly predicted high school GPA ($p = .64$ and $p = .95$, respectively). Further, extra-curricular involvement did not emerge as a significant moderator, $p = .18$.

The model predicting academic self-concept was also significant overall, $F(4, 69) = 3.82$, $p < 0.01$, $R^2 = 0.18$. In this case, however, ACEs did emerge as a significant predictor of academic self-concept, $p < .01$, although extra-curricular involvement did not, $p = .19$. Further, a significant interaction was found, $\Delta R^2 = .09$, $F(1, 69) = 7.72$, $p < 0.01$, whereby the negative relationship between ACEs and academic self-concept was no longer significant at mean or high levels of extra-curricular involvement. In other words, ACE scores only predicted poorer academic self-concept for individuals with low levels of extra-curricular involvement.

Chapter 5

Discussion

The purpose of this study was to examine the relationship between ACEs and both high school academic performance and student self-perception. Furthermore, this study sought to determine if community or high school extra-curricular involvement could moderate the effects of ACEs. In particular, it was hypothesized that students with higher ACE scores would have poorer academic performance than those with low ACE scores. Second, it was hypothesized that students with higher ACE scores would have a lower academic self-concept than students with lower ACE scores. This lower academic self-concept score would in turn negatively impact academic performance. The final two hypotheses suggested that students with higher ACEs who were also involved in community or high school extra-curricular activities would be less likely to experience the negative outcomes of poorer GPA and academic self-concept relative to students with high ACEs who were not involved in extra-curricular activities.

Some study hypotheses were supported, while others were not. Based on previous empirical research (Blodgett & Lanigan, 2018) that ACEs negatively affect academic performance, H1 suggested that ACEs would correlate with poorer academic success. Results from this study, however, did not show a significant correlation between ACEs and academic performance in students' high school careers. Furthermore, H2 was also not supported, as ACEs was not significantly correlated with students' academic self-concept.

Hypothesis 3 suggested that community or high-school extra-curricular involvement would serve as a moderator of the relationship between ACEs and GPA. This hypothesis was not supported. This inconsistency could be for a variety of reasons, most notably the inability to calculate the participant's self-confidence, school atmosphere, and resiliency. ACEs are known

to lead to academic failure, decreased attendance, and behavioral problems (Blodgett & Lanigan, 2018), this study however did not measure behavioral issues, attendance rates, or failure rates from the participants. GPA often measures the combination of work-ethic and intelligence, so if the participants with ACEs have resiliency through their caregivers, school mentors, or self- total involvement would significantly increase the participants' GPA.

Finally, Hypothesis 4, which predicted that extra-curricular involvement would buffer the effects of ACEs on academic self-concept, was supported. Findings from the present study show a significant interaction between ACEs and total involvement when looking at academic self-concept scores. This suggests that involvement can decrease the effects of ACEs on academic self-concept. In other words, involvement in an extra-curricular or community activity can promote higher levels of academic self-concept and combat the negative effects associated with ACEs. Students who are more involved in their high school careers may have a higher level of self-confidence as a student. This finding is consistent with literature that involvement in a supportive group or community can promote higher levels of self-worth (Zarecki, 2020).

Limitations

Limitations to this research include a lack of generalizability to the general student population. Participants in this study were, overall, relatively high-achieving. For example, every participant was currently enrolled in a four-year institution. This fact suggests that the participants already have a somewhat high level of resilience and academic self-concept due to their ability to attend college. Furthermore, the grade-point-average (GPA) mean for the participants' high school careers was a 3.7. This GPA is relatively high when looking at a regular GPA scale, and this also suggests that the students have the resilience and self-concept needed to be successful in academia regardless of the adversity they have faced. This level of high

achievement is not generalizable to every student in the United States. Furthermore, only 10.6% of the participants identified as a minority racial/ethnicity group. The majority of participants (89.3%) were white. This sample is not generalizable to the United States population.

Another limitation includes the COVID-19 pandemic. As mentioned previously, the COVID-19 pandemic has resulted in increased student mental health concerns, and consequently additional funding and resources for mental health in schools (Scarpetta et. al., 2021). This increase in mental health resources could be a cause for higher academic self-concepts in students. Furthermore, the COVID-19 pandemic has transitioned many schools to an online platform. Online classes could allow for an easier work load and, in turn, increase the participants' overall academic success.

Implications

Despite limitations, the current research has several important implications. Most notably, our research indicated that extra-curricular involvement can buffer the effects of ACEs on how students perceive themselves academically. By understanding that student involvement can increase academic self-confidence and the negative effects of ACEs, schools across the United States can promote new ways to get their students involved in different activities. Future research could also be conducted to understand what types of involvement promote the most student academic confidence. This involvement could range from student-teacher pairings to high-school community service clubs. From these results, schools across the county could include potential trials involving academic mentor programs, smaller class sizes, and diverse-interest trade classes. Overall, understanding this relationship and implementing programs could increase student self-confidence and potential enjoyment of academia.

In conclusion, the present study was created to assess the relationship between ACEs and both student self-perception and academic performance. We specifically used individuals over the age of 18 to fully assess their extent of childhood trauma along with their statistics from their high school careers. Our results indicated that academic student self-perception has a significant relationship between total community and high school extra-curricular involvement along with ACEs. We believe that these results reflect a need for student support in educational facilities to promote academic self-confidence. Ultimately, we anticipate that the results of this study will be used as a stepping stone for further research on how student academic self-concept and student involvement can relate to different levels of academic success and different levels of childhood trauma in students.

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Appendix

Table 1. Descriptive Statistics for Measures

	N	Minimum	Maximum	Mean	Std. Deviation
High School GPA	73	2.01	4.40	3.719	.4304
ASCS Average	75	2.05	3.30	2.82	.251
Total Involvement	75	.00	12.00	3.667	2.910

Table 2. Correlations between ACE scores, ASCS scores, and involvement

		GPA_hs	aces_tot	ascs_avg	tot_invo
GPA_hs	Pearson Correlation	1	-.041	-.101	.305**
	Sig. (2-tailed)		.728	.394	.009
	N	73	73	73	73
aces_tot	Pearson Correlation	-.041	1	-.058	-.126
	Sig. (2-tailed)	.728		.624	.280
	N	73	75	75	75
ascs_avg	Pearson Correlation	-.101	-.058	1	-.107
	Sig. (2-tailed)	.394	.624		.360
	N	73	75	75	75
tot_invo	Pearson Correlation	.305**	-.126	-.107	1
	Sig. (2-tailed)	.009	.280	.360	
	N	73	75	75	75

Table 3. ACEs and GPA with the addition of involvement.

	coeff	se	t	p	LLCI	ULCI
constant	3.2587	.1837	17.74	.0000	2.892	3.625
ACEs total	-.0133	.0281	-.4735	.6374	-.0694	.0428
Total Involvement	-.0016	.0234	-.0691	.9451	-.0483	.0450
Int	.0078	.0058	1.3560	.1796	-.0037	.0193
Parent Education	.0947	.0356	2.6595	.0098	.0237	.1658

Table 4. ACEs and Academic Self-Concept with the addition of involvement.

	coeff	se	t	p	LLCI	ULCI
constant	3.199	.1076	29.73	.0000	2.984	3.41
ACEs total	-.0492	.0167	-2.941	.0044	-.0826	-.0158
Total Involvement	-.0184	.0139	-1.326	.1893	-.0460	.0093
Parent Education	.0095	.0034	2.779	.0070	.0027	.0163
Interaction	-.0572	.0203	-2.822	.0062	-.0977	-.0168