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The Association Between Adverse Childhood Experiences, Resiliency & Perceived Stress Regarding Academic Success Among Undergraduate Students

Leslie Simon

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Abstract

This study explores the complex interplay between Adverse Childhood Experiences (ACEs), resilience, perceived stress, and their collective impact on academic success among undergraduate students. It aims to assess the prevalence of Adverse Childhood Experiences (ACEs) and investigate how they correlate with academic outcomes. The research focuses on the mediating role of resilience and the moderating effect of perceived stress in this relationship. Utilizing a quantitative approach, this study seeks to provide a comprehensive understanding of these dynamics and their implications for educational policies and mental health interventions. The goal is to inform strategies that enhance resilience, reduce stress, and support academic success in students affected by ACEs.

Adverse Childhood Experiences, Resiliency & Perceived Stress

MONTCLAIR STATE UNIVERSITY

The Association between Adverse Childhood Experiences, Resiliency & Perceived Stress Regarding Academic Success among Undergraduate Students

> A Master's Thesis Presented to The Faculty of Montclair State University Montclair, New Jersey

> In Partial Fulfillment Of the Requirements for the Degree Master of Arts in Psychological Sciences College of Humanities and Social Sciences Department of Psychology

> > By Leslie Simon May 2024

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A Thesis

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> By Leslie Simon Montclair State University Montclair, NJ May 2024

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Introduction

Adverse Childhood Experiences (ACEs)

Adverse Childhood Experiences (ACEs) are formative traumatic events that occur before age 18 and have long-lasting effects on an individual's well-being (Felitti et al., 1998). These experiences span a range of adversities, including physical, emotional, or sexual abuse, as well as various types of household dysfunction like substance abuse and domestic violence. The influence of ACEs on diverse life outcomes has been rigorously studied (Felitti et al., 1998; Merians et al., 2019). Nevertheless, the intricate relationship between ACEs, resilience, perceived stress, and academic success remains a complex subject deserving of thorough examination.

Over the years, the study of ACEs has gained significant traction, not just for its health implications (Felitti et al., 1998) but also for its role in shaping educational and vocational trajectories (Merians et al., 2019).

To fully grasp the magnitude of this issue, it is crucial to first consider the prevalence of ACEs within educational contexts. Educational institutions serve as more than just academic platforms; they are complex social and emotional ecosystems where students forge relationships, develop coping skills, and build resilience. Given the multifaceted role of these settings, understanding the interplay among ACEs, resilience, and perceived stress is vital for a host of stakeholders, including educators, policymakers, and mental health experts. The relationship between ACEs, resilience, and academic success is not straightforward but rather complex and multi-dimensional.

Resilience, the ability to bounce back from adversity, is influenced by a combination of individual traits, family support, and community resources. Sciaraffa et al. (2018) delved into the mechanisms that could nurture resilience from an early age, suggesting that educational interventions could be pivotal. Moreover, perceived stress, shaped by ACEs and resilience, has implications for academic achievement (Karatekin & Ahluwalia, 2020). Therefore, a comprehensive understanding of these interconnected factors is essential for addressing the challenges and opportunities that lie ahead.

The Prevalence of ACEs in Educational Settings

The prevalence of Adverse Childhood Experiences (ACEs) in educational settings is not merely a statistical anomaly but a pressing issue with far-reaching consequences for mental health, academic performance, and overall well-being. A multitude of studies across diverse student populations and geographical locations have sounded "the alarm" on this issue. For instance, Sciolla et al. (2019) focused their studies on medical students, a demographic often presumed less susceptible to ACEs due to their higher educational status. Contrary to this assumption, the study found that 51% of medical students reported experiencing at least one ACE. This finding is particularly problematic given the high-stress nature of medical education and the impending responsibility of patient care. Unresolved childhood trauma could have a lasting impact on their mental health and, consequently, their professional competence.

This concern is not confined only to the educational sphere but extends into professional life. Yellowlees et al. (2021) found a significant correlation between ACEs and physician burnout, emphasizing the long-term occupational repercussions. Similarly, Chen et al. (2023) conducted a study among college students in China and found comparable rates of ACEs, thereby broadening the scope of this issue to a global scale. The study revealed that these experiences negatively affected the students' resilience, impairing their ability to cope with academic and life challenges.

Adding another layer to this complex issue, Dong et al. (2020) explored the relationship between childhood trauma and family resilience among undergraduate nursing students. Their findings align with other research, suggesting that the high prevalence of ACEs is not confined to specific student populations or regions. In the community college context, Brogden and Gregory (2019) also underscored the widespread nature of ACEs, revealing that a significant proportion of community college students had experienced adverse childhood experiences, which were linked to various challenges in their academic and personal lives, while Watt et al. (2020) focused on the mental health ramifications among college students finding that adverse childhood experiences were significantly related to higher levels of stress and decreased mental well-being.

Given the ubiquity of ACEs, understanding their impact on resilience becomes imperative. Addie et al. (2022) contributed to this understanding by examining the broader life functioning of college students who faced childhood adversity, offering a more holistic perspective. The findings indicated that students with a history of childhood adversity exhibited varying degrees of resilience, which significantly influenced their overall life functioning. This emphasized the importance of considering a range of life domains, including emotional well-being, social relationships, and academic performance, when assessing the long-term impacts of ACEs on college students. Although the high prevalence of ACEs is concerning, the construct of resilience provides a nuanced lens through which it can be understood how individuals navigate these challenges. For example, a study among veterinary students found that 61% reported at least one ACE (Strand et al., 2017), while another study among U.S. undergraduates found a varied distribution: 47% reported no ACEs, 26% had one, 19% had two to three, and 8% had four or more (Heard-Garris et al., 2018).

The prevalence of ACEs in educational settings was found to be alarmingly high and cuts across various student populations and geographical locations. This poses significant concerns for mental health and academic performance. However, resilience offers a more nuanced understanding, allowing us to explore how individuals can navigate these formidable challenges.

ACEs and Resilience

The prevailing body of research predominantly indicates a negative correlation between Adverse Childhood Experiences (ACEs) and resilience. For instance, Chen et al. (2023) discovered that ACEs adversely affected resilience among Chinese college students, potentially by undermining parent-child relationships and family stability. Similarly, Sciolla et al. (2019) found that medical students with elevated ACE scores were more likely to report detrimental mental health outcomes, which could serve as a proxy for diminished resilience.

Several studies have investigated the mediating role of resilience between ACEs and various life outcomes, such as academic performance and mental well-being.

Karatekin and Ahluwalia (2020) elucidated that ACEs, social support, and stress collectively accounted for over half of the variance in mental health scores among college students, with stress being the most significant contributor. However, resilience emerged as a mitigating factor that could attenuate the adverse impacts of ACEs. This mediating role is further explored by Brogden & Gregory (2019) in the context of community college students and Blickenstaff et al. (2021) among medical students, further enriching the understanding of resilience's multifaceted role across diverse educational landscapes.

It is imperative to recognize that resilience is not a monolithic or static construct; it fluctuates both inter-individually and intra-individually over time. Addie et al. (2022) delved into this dynamic nature of resilience, examining how childhood adversity influences risk and resilience factors in college students' functioning. Edwards et al. (2016) found that resilience was inversely correlated with adversity within the parent-child relationship but positively associated with academic delay of gratification and age. This also implies that resilience is a complex construct shaped by an array of factors, including coping strategies and developmental stages.

Moreover, protective factors such as robust family bonds, community support, and conducive educational environments can bolster resilience (Sciaraffa et al., 2018). Heard-Garris et al. (2018) demonstrated that family-level protective factors, like shared meals and religious service attendance, were positively correlated with resilience. Dong et al. (2020) extended this line of inquiry by investigating the role of family resilience in mitigating the effects of childhood trauma on individual resilience among nursing students. Their findings highlighted that family resilience plays a crucial role in this context. Specifically, they discovered that higher levels of family resilience were associated with stronger individual resilience among nursing students, indicating that supportive and adaptive family environments can significantly counteract the negative impacts of childhood trauma. This underscored the importance of family dynamics in fostering resilience and coping mechanisms in individuals who have experienced childhood adversities.

Gender disparities also introduce another layer of complexity in the ACEs-resilience nexus. Sciolla et al. (2019) found that female students generally reported higher ACE scores and were more likely to experience significant mental health effects. While the relationship between gender, ACEs, and resilience remains underexplored, some theories posit that gender-specific socialization processes may contribute to these disparities. For example, the tendency for females to be socialized to express emotions more openly could influence their reporting and coping mechanisms related to ACEs. This necessitates gender-sensitive approaches in educational interventions and further research to unpack these gender-specific nuances, as emphasized by Watt et al. (2020) and Grigsby et al. (2020).

The relationship between ACEs and resilience is intricate and shaped by many variables, including gender, protective factors, and individual variability (Watt et al., 2020; Grigsby et al., 2020). While the overarching narrative suggests a negative correlation between ACEs and resilience, the presence of protective factors and the inherent variability in resilience levels complicate this relationship. Further scholarly inquiry is essential to dissect these complexities and their implications for academic success and mental well-being. Additionally, understanding resilience is merely one facet of a more complex equation; perceived stress also plays a pivotal role, interacting with both ACEs and resilience to influence academic outcomes.

ACEs and Perceived Stress

The issue of perceived stress among students, especially those in higher education, has garnered considerable attention due to its pervasive impact on academic performance, mental health, and overall well-being (Grigsby et al., 2020; Karatekin et al., 2020; Watt et al., 2020). This stress is often exacerbated when students have a history of Adverse Childhood Experiences (ACEs). Empirical studies, such as those by Watt et al. (2020) and Sciolla et al. (2019), substantiated the direct relationship between ACEs and elevated levels of perceived stress, which is often mediated by mental health issues such as anxiety and depression. Karatekin and Ahluwalia (2020) further elucidate this relationship, revealing that undergraduates with higher ACE scores not only experience elevated stress but also have diminished social support, thereby amplifying their stress levels.

The role of stress as a mediator between ACEs and academic outcomes was also explored. For example, a study by Peterson and Morfoot (2022) examined the impact of external stressors like the pandemic and online classes on mental health and academic performance. The study found that internal factors such as stress, anxiety, and lack of motivation were prevalent, suggesting that stress tends to serve as a mediating variable between ACEs and academic success. Moreover, their ACEs history may influence students' coping mechanisms to manage stress. Edwards et al. (2016) found a negative correlation between resilience and adversity within the parent-child relationship, implying that ACEs could hinder the development of effective stress management strategies. It is also crucial to note that perceived stress often coexists with other mental health issues like anxiety and depression, adding another layer of complexity to the relationship between ACEs and academic outcomes (Hedrick et al., 2021). Yellowlees et al. (2021) highlighted the long-term implications of this relationship, showing that physicians with ACE histories are more susceptible to professional burnout.

Gender disparities further complicate the ACEs-stress dynamic. Studies like those by Grigsby et al. (2020) and Sciolla et al. (2019) indicated that the impact of ACEs on perceived stress may be gender-specific, necessitating a nuanced understanding and potentially gender-sensitive interventions. Given the detrimental effects of ACEs on both resilience and perceived stress, the mediating role of resilience becomes a critical area for scholarly inquiry.

In summary, the relationship between ACEs (Adverse Childhood Experiences) and perceived stress is intricate and influenced by many factors, such as gender, coping strategies, and mental health comorbidities. Addie et al. (2022) further enriched this complex narrative by revealing that the majority of college students with high ACEs scores demonstrated resilience in at least one area of life functioning, including stress management, mental health, and academic achievement. Remarkably, 34% of these students were resilient across all three measures. The study also identified coping

self-efficacy as a significant buffer against ACEs' negative mental health impacts. Understanding these multifaceted relationships is imperative for the development of targeted interventions aimed at effective stress management, which in turn could enhance academic performance and mental well-being. This body of work underscores the importance of a nuanced approach that considers both the vulnerabilities and strengths that individuals bring into their adult lives, especially in the context of higher education.

Resilience as an Intermediary Variable

The notion of resilience as a mediating factor posits that while Adverse Childhood Experiences (ACEs) generally tend to influence academic success negatively, resilience can serve as a buffer, mitigating these adverse effects. Resilience is often understood as a dynamic set of personal attributes that enable individuals to flourish despite facing adversity. In line with this, Karatekin and Ahluwalia (2020) describe resilience as a dynamic interplay between the individual and their environment. Their empirical work substantiated the mediating role of resilience, revealing that even in the presence of ACEs and stress, higher levels of resilience appear to correlate with better mental health outcomes, which could subsequently lead to improved academic performance.

The mechanisms through which resilience mediates the relationship between ACEs and academic outcomes are multifaceted. They can include cognitive adaptability, problem-solving acumen, and emotional regulation. Edwards et al. (2016) pinpointed two significant individual predictors of resilience: a lack of adversity within the parent-child relationship and an internal locus of control. These factors could serve as the conduits through which resilience mitigates the adverse effects of ACEs.

However, it is also imperative to consider the moderating factors that could influence the role of resilience. Jolley (2017) provided a nuanced understanding of potentially traumatic events (PTEs), categorizing them into interpersonal and non-interpersonal types. Interpersonal PTEs are events like sexual assault or physical abuse directly caused by another person, while non-interpersonal PTEs include life-threatening illnesses or accidental injuries (Fleming & Ledogar, 2008). Jolley (2017) found that the type and accumulation of these PTEs were linked to increased adjustment difficulties. Specifically, interpersonal forms of PTEs were more predictive of adjustment challenges than non-interpersonal forms. This suggests that resilience's mediating or moderating role may vary depending on the specific nature and accumulation of PTEs experienced by an individual. Therefore, any interventions aimed at enhancing resilience must consider the complexity of an individual's exposure to different types of PTEs. Nevertheless, she also observed that resilience factors were predictive of lower adjustment difficulties, suggesting that the role of resilience could be contingent on the type and severity of ACEs or PTEs experienced.

The practical implications of understanding resilience as an intermediary variable are significant, especially for educational institutions. Implementing resilience-building programs within a multi-tiered system of support (MTSS) could offer a holistic approach to enhancing student well-being. Sciaraffa et al. (2018) advocated for the early introduction of such programs, which could encompass cognitive-behavioral therapy, mindfulness practices, and social-emotional learning curricula, as a long-term strategy to counteract the negative impacts of ACEs. Future research could benefit from longitudinal studies to more precisely elucidate the causal relationships among ACEs, resilience, and academic success. Given that a considerable minority of medical students report exposure to multiple ACEs, as indicated by Sciolla et al. (2019), there is a pressing need for ongoing research to assess the efficacy of resilience-building interventions.

In summary, conceptualizing resilience as a mediator provides a foundational framework for investigating the protective factors and interventions that can ameliorate the impact of ACEs on academic and mental well-being.

Protective Factors and Interventions

Family dynamics, including communal activities like shared meals and religious observances, have been empirically demonstrated to bolster student resilience (Heard-Garris et al., 2018). Dong et al. (2020) further accentuated the role of family resilience as a protective factor, particularly for nursing students who encountered childhood trauma. These familial interactions often act as stabilizing agents, counterbalancing the disruptive effects often associated with Adverse Childhood Experiences (ACEs). For example, the communal act of sharing meals engenders a sense of belonging and emotional security, which is invaluable for those who have faced childhood adversity (Heard-Garris et al., 2018). Likewise, engagement in religious or spiritual practices could provide a coping and meaning-making framework, thereby contributing to resilience (Sciaraffa et al., 2018).

Educational institutions are critical players in mitigating the ramifications of ACEs. Sciaraffa et al. (2018) advocated for the early integration of resilience-building

strategies in educational settings as a prophylactic measure against the long-term impacts of ACEs. Rossen and Cowan (2013) endorsed the Multi-Tiered System of Supports (MTSS) as a comprehensive framework for student well-being, particularly for those with a history of trauma. This framework includes universal preventive measures, such as school-wide anti-bullying initiatives, as well as targeted interventions like individual counseling for students with elevated ACE scores. The inclusion of mental health professionals trained in trauma-informed care is therefore deemed essential for early identification and management of trauma-related issues.

Social support networks, including peer relationships, are also pivotal protective factors. Banyard and Cantor (2004) found a positive correlation between perceived social support and resilience, including successful academic adaptation. Peer mentorship programs, especially those where mentors are trained to identify signs of stress or trauma, could be particularly effective. The sense of belonging engendered by robust social networks can act as a psychological buffer against the adverse impacts of ACEs.

Cognitive-behavioral interventions have been empirically validated as an effective means of enhancing resilience through the teaching of adaptive coping mechanisms and stress management techniques. These measures can be integrated into academic curricula or offered as standalone workshops. In the digital era, online platforms offer additional avenues for mental health support and resilience-building, facilitating access to services and educational content (Karatekin & Ahluwalia, 2020).

Community-based initiatives that focus on skill development, mentorship, and safe environments also contribute to resilience (Sciaraffa et al., 2018). These are

particularly relevant during transitional educational phases, such as the shift from secondary to tertiary education. Collaborations between community organizations and educational institutions can offer extracurricular programs that foster life skills, mentorship opportunities, and safe spaces for social interaction (Brogden & Gregory, 2019).

A multi-dimensional approach that integrates family, educational institutions, and community programs is crucial for mitigating the adverse effects of ACEs on resilience and academic performance (Sciaraffa et al., 2018). These multi-level interventions serve as buffers and contribute to holistic well-being, a critical determinant of academic success. The implications of these findings are expansive, underscoring the need for integrated, multi-disciplinary approaches that consider the intricate interplay between ACEs, resilience, and academic success.

Implications for Academic Success

The empirical literature robustly substantiated the deleterious impact of Adverse Childhood Experiences (ACEs) on cognitive faculties that are indispensable for academic success (Felitti et al., 1998). These faculties include attentional control, memory retention, and executive functions, which are not merely peripheral but central to academic achievement (Karatekin & Ahluwalia, 2020). Jolley et al. (2017) provided compelling evidence which suggests that exposure to potentially traumatic events (PTEs) is positively correlated with psychosocial maladjustment. This maladjustment, in turn, has a cascading effect on academic performance, leading to tangible and adverse outcomes such as suboptimal grade point averages (GPAs), elevated attrition rates, and diminished engagement in academic activities. This establishes a causal pathway, suggesting that ACEs can cause academic difficulties, necessitating targeted interventions to break this cycle.

Resilience emerges as a pivotal psychological construct in this context, serving as a potential buffer against the adverse effects of ACEs on academic outcomes. This literature, employing a variety of research designs including both cross-sectional and longitudinal studies, consistently indicates that individuals with higher levels of resilience are more adept at navigating adversities (Merians et al., 2022; Peterson & Morfoot, 2022). They are better equipped to maintain attentional focus, manage stress, and achieve academic milestones, even when faced with significant challenges. Edwards et al. (2016) enriched this discourse by identifying a positive correlation between resilience and academic delay of gratification. This construct has been identified as a robust predictor of academic success (2016). This suggests that resilience may not merely be an ancillary factor but could serve as a critical intermediary variable in the relationship between ACEs and academic outcomes.

Perceived stress, another psychological construct, often becomes exacerbated in the presence of ACEs and can have a detrimental impact on academic performance. Elevated stress levels can trigger a cascade of negative outcomes, including academic burnout, attenuation of intrinsic motivation, and compromise of mental well-being. Yellowlees et al. (2021) added another layer to this intricate web by demonstrating that the detrimental effects of ACEs can persist into professional life, affecting academic and occupational success. However, resilience continues to serve as a mitigating factor against these detrimental effects. Studies like that of Karatekin and Ahluwalia (2020) found that the complex interplay between ACEs, social support, and perceived stress accounted for a substantial proportion of the variance in mental health metrics among collegiate populations. This underscores the need for multi-dimensional interventions that address not only ACEs but also the associated stress and mental health issues.

Gender disparities further complicate the landscape. Sciolla et al. (2019) reported that female medical students were more likely to have elevated ACE scores and to perceive a more pronounced impact on their mental health. This gender-specific vulnerability could potentially influence their academic trajectory and subsequent professional advancement. This necessitates developing and implementing gender-sensitive interventions, as corroborated by studies like those of Blickenstaff et al. (2021) and Grigsby et al. (2020).

Protective factors, such as robust familial support, active community engagement, and accessibility to mental health services, could function as protective mechanisms against the detrimental effects of ACEs and stress. Watt et al. (2020) emphasized the need for mental health services tailored for college students who have experienced ACEs, as this demographic showed a significant correlation between ACEs and mental health issues that can impact academic success. Dong et al. (2020) underscored the importance of family resilience as a mitigating factor, suggesting that interventions aimed at enhancing family resilience could also contribute to academic success. Educational institutions can proactively deploy targeted interventions, including psychological counseling, peer mentorship programs, and stress management seminars, to bolster resilience and enhance academic outcomes. Addie et al. (2022) and Yellowlees et al. (2021) further underscored the need for such interventions, not just in educational but also in professional settings.

The intricate relationship between ACEs, resilience, and academic success has profound implications for educational policy and practice. Given the empirical evidence, it is incumbent upon educational institutions to integrate trauma-informed pedagogical strategies and resilience-building programs into their curricular and extracurricular frameworks. This would better support students who have been exposed to ACEs, thereby promoting a more equitable educational environment. However, the current research landscape is not without limitations, including a reliance on cross-sectional methodologies and self-reported metrics, which constrain causal inferences and introduce potential biases. Future research should prioritize longitudinal studies and focus on specific populations within educational settings, as Blickenstaff et al. (2021) suggested. Such targeted research could lead to specialized interventions that enhance both resilience and academic success. Expanding the scope to include intersectional analyses, considering variables such as gender, ethnicity, and socioeconomic status, would further enrich comprehension of these intricate relationships.

The intricate interplay between ACEs, resilience, and academic success necessitates a multi-faceted, evidence-based educational policy and practice approach. Academic institutions stand to benefit from implementing a range of targeted interventions, from specialized mental health services to mentorship programs and stress mitigation strategies. Future research should aim to address the current limitations by adopting

longitudinal frameworks and focusing on specific, intersectional populations, thereby providing a more comprehensive understanding that could inform effective interventions.

Purpose of the Study

The study significantly contributes to the expanding body of research on Adverse Childhood Experiences (ACEs) and their multifaceted impacts within educational contexts. By delving into the complex interplay between ACEs, resilience, perceived stress, and academic outcomes, this study offers a comprehensive analysis that extends beyond the established correlations found in prior research. While acknowledging the substantial work of Felitti et al. (1998), Merians et al. (2019), and others in establishing the foundational understanding of ACEs and their broad consequences, this study specifically explores how resilience and perceived stress might act as mediating factors in the relationship between ACEs and academic success. This focus on intermediary variables enriches the current literature by providing deeper insight into the mechanisms through which ACEs influence educational trajectories. The findings underscore the complexity of these relationships and highlight the importance of tailored interventions. By integrating and building upon insights from Sciaraffa et al. (2018), Karatekin & Ahluwalia (2020), and others, the study not only reinforces the importance of considering a variety of life domains in assessing the impact of ACEs but also introduces new dimensions for understanding the role of resilience and stress in educational outcomes. Consequently, this research may contribute a vital piece to the puzzle of how educational institutions and policymakers can effectively support students with a history of childhood adversity, ensuring their academic and overall well-being.

Aims and Hypotheses

This study endeavors to dissect the multifaceted dynamics between Adverse Childhood Experiences (ACEs), resilience, and perceived stress, with a focal point on their collective impact on students' academic achievements.

• Aim 1: Prevalence of ACEs in a Diverse College Sample.

Hypothesis 1: Echoing findings from general adult populations, it is anticipated

that the majority of college students will report experiencing less than 4 ACEs.

• Aim 2: ACEs and Academic Achievement

Hypothesis 2: A negative correlation is postulated between the incidence of ACEs and academic success, as measured by GPA, in undergraduate students.

• Aim 3: Resilience as an Intermediary Variable

Hypothesis 3: The study seeks to investigate the potential mediating role of

resilience in the relationship between ACE prevalence and academic success.

• Aim 4: Perceived Stress as a Moderator

Hypothesis 4: It is hypothesized that perceived stress may modify the impact of ACEs on academic performance, potentially exacerbating negative outcomes in high-stress scenarios.

• Aim 5: Impact of Demographic Variables

Hypothesis 5: The study proposes to examine how various demographic variables may significantly and positively affect academic performance, suggesting that certain demographics are associated with higher academic achievement.

• Aim 6: Demographic Variables and GPA

Hypothesis 6: This part of the study aims to investigate the direct effects of demographic variables on GPA.

• Aim 7: A Comprehensive Predictive Model

Hypothesis 7: The study anticipates that a comprehensive model incorporating resilience, ACE prevalence, demographic variables, and perceived stress will effectively predict academic performance, as indicated by GPA.

Significance of the Study

The study's significance is rooted in its potential to influence targeted interventions and policy initiatives designed to enhance resilience and reduce stress, thereby boosting educational outcomes for students impacted by ACEs. The anticipated insights hold considerable value for educators, policymakers, and mental health professionals, contributing to strategies that support students affected by adverse childhood experiences. This research is envisioned as a critical contribution to the field, offering a nuanced understanding of the elements that shape academic trajectories amid adversity.

Method

Throughout this study, the definition of Adverse Childhood Experiences (ACEs) as outlined by Felitti et al. (1998) was adopted. This framework encompassed a broad spectrum of traumatic experiences encountered during childhood, including but not limited to physical, emotional, and sexual abuse; physical and emotional neglect; and various forms of household dysfunction such as exposure to domestic violence, living with family members who struggle with substance abuse or mental illness, or who have been incarcerated, and experiencing parental separation or divorce. This inclusive approach to understanding ACEs is pivotal in examining the long-term impacts on physical and mental health, behavioral patterns, and social outcomes in a comprehensive manner, allowing for the exploration of their correlation with resilience and perceived stress, particularly in relation to the academic success of undergraduate students.

Participants

Data collection for this study was conducted at Montclair State University during the spring semester of the 2023/2024 academic year, encompassing 145 participants currently enrolled at the institution (*see Table 1.*). Montclair State University is characterized by its ethnic diversity, as reflected in the composition of the participant group: 30.34% identified as White (n = 44), 9.66% as Black or African American (n =14), 40.70% as Hispanic/Latinx (n = 60), 15.17% as Asian (n = 22), and 3.45% as belonging to other ethnic groups (n = 5). This study aimed to create a diverse sample across various disciplines. A target sample size of 107 students was established based on a power analysis using G*Power software (Faul et al., 2007; Faul et al., 2009). In total, 165 individuals completed the survey. However, 20 responses were excluded as part of a rigorous quality control assessment. This exclusion was based on the failure to correctly follow an attention check embedded within the Perceived Stress Scale, where respondents were explicitly instructed to "Select Almost Never" for a specific question designed to gauge the respondents' attention and quality of response. This instruction served as a validity check to ensure the reliability of the data collected. The exclusion of these 20 responses, which did not pass this quality check, was performed prior to any further analyses to maintain the integrity of the dataset.

Materials

In this study, data were collected through four primary instruments administered online via the Qualtrics platform. Participants were first asked to complete a demographic questionnaire, which gathered basic information such as chronological age, gender, ethnicity, academic major, GPA, employment status, and involvement in extracurricular activities *(see Appendix.)*. This information provided context for the more focused psychological measures that followed.

The Adverse Childhood Experience (ACE) Questionnaire, a tool initially developed by Felitti et al. (1998), was utilized to assess the extent of childhood adversity among participants. This questionnaire, integral in quantifying multifaceted aspects of early adversity such as abuse, neglect, and various forms of household dysfunction, assigns a numerical score based on responses to ten targeted questions. Sample items include questions about personal experiences of physical abuse, emotional neglect, and exposure to household substance abuse, among others *(see Appendix.)*. Scores range from 0-10 and higher scores indicate a greater frequency of ACEs. A score of greater than 4 is considered clinically significant (Felitti et al., 1998). The questions are designed to capture the prevalence of adverse childhood experiences and their impact, not the severity level of the experiences themselves. Regarding its psychometric properties, the ACE Questionnaire has been validated across various populations and is noted for its strong reliability and ability to predict future health outcomes. The ACE Questionnaire's extensive application in epidemiological research underpins its value in examining the enduring effects of childhood experiences on adult health outcomes.

The Perceived Stress Scale (PSS-10) was employed to measure the participants' perceived stress levels (Cohen et al., 1983; Cohen & Williamson, 1988). This scale prompted participants to reflect on their feelings and thoughts over the past month, with responses anchored on a Likert scale ranging from 0 (never) to 4 (very often). Questions such as "In the last month, how often have you been upset because of something that happened unexpectedly?" and "In the last month, how often have you felt unable to control important things in your life?" aimed to gauge subjective stress perception. Importantly, the PSS measures perceived stress rather than the actual existence of stressors, acknowledging that individual responses to similar situations can vary significantly based on personal coping mechanisms and support networks. Higher scores on this measure indicate greater levels of perceived stress. The validity and reliability of the PSS-10 have been established in various populations, indicating its robustness as a psychological measure (Cohen & Williamson, 1988; Cohen et al., 1983).

Finally, the Resilience Scale, as developed by Wagnild and Young (1998), was applied to assess each participant's resilience level, which refers to their capacity to withstand and recover from adverse situations. This 25-item scale rates responses on a 7-point scale, from 1 (strongly disagree) to 7 (strongly agree). The Resilience Scale (RS) evaluates vital components such as personal competence, self-acceptance, and the capability to maintain equilibrium amidst challenges. Sample items from the scale might include statements like, "I usually manage one way or another", and "I am determined". Regarding its psychometric properties, the RS has demonstrated robust validity and reliability, making it a dependable tool in identifying qualities that facilitate individual resilience. These attributes contribute significantly to understanding how people effectively navigate life's adversities. The total score, which can range from 25 to 175, is indicative of one's resilience level; higher scores suggest greater resilience. This scale has been validated and is widely used to assess resilience across various populations, providing a reliable measure of this crucial psychological construct.

Procedure

Participation in this study was strictly voluntary, targeting a diverse sample in terms of ethnicity and academic disciplines for a representative sample. All components of the procedure were approved by Montclair State's IRB. Recruitment was conducted via the university's SONA system. Participants were required to read and complete an electronic informed consent form prior to answering the questionnaires. This form was critical in ensuring participants understood the study's aims, procedures, and the confidentiality of their responses. It also detailed their right to withdraw at any point and provided resources for emotional support, should they experience any distress during or after their participation.

Upon obtaining informed consent, participants were then asked to provide demographic information, including their age, gender, ethnicity, academic major, GPA, employment status, and involvement in extracurricular activities.

The study employed the Adverse Childhood Experiences (ACE) Questionnaire for assessing various facets of childhood adversity such as abuse, neglect, and household dysfunction. Each participant responded to 10 specific questions that quantified their exposure to these adverse experiences, covering aspects like inadequate care, living with someone with substance abuse issues, or incarceration.

Following the ACEs Questionnaire, participants then completed the Perceived Stress Scale (PSS-10). This scale evaluated the extent to which participants perceived their lives as stressful by reflecting on their feelings and thoughts over the previous month. The scale emphasizes the subjective nature of stress, acknowledging that stress levels can vary based on individual perceptions and coping abilities. Respondents rated their responses on a 5-point Likert scale, assessing the frequency of their stress-related experiences.

The participants then filled out a final questionnaire, the Resilience Scale by Wagnild and Young (1988). This 25-item scale measured participants' resilience, focusing on traits like personal competence, optimism, and adaptability. It aimed to understand how participants adapt and recover from adversity. The participants' responses were recorded on a 7-point Likert scale, with statements reflecting personal resilience traits.

Upon completing all questionnaires, participants were presented with a debriefing form. This form reiterated the study's purpose, expressed gratitude for their participation, and again offered crisis resources to address any potential emotional distress encountered during the survey.

Results

Sample Description

The final sample in the study comprised 145 participants, all of whom had satisfied the predetermined quality control criteria. The sample exhibited rich diversity in terms of gender and age, as well as considerable ethnic variety. Specifically, 30.3% (n =44) of the participants identified as White, 41.4% (n = 60) as Hispanic/Latinx, 15.2% (n =22) as Asian, 9.7% (n = 14) as Black or African American, and 3.4% (n = 5) as Other. This composition underscored the multi-ethnic nature of the study, which facilitated a more comprehensive understanding of the interplay between academic performance and various socio-demographic factors. Regarding gender diversity, 77.24% (n = 112) of the sample identified as female, 19.31% (n = 28) as male, 2.07% (n = 3) as non-binary/genderfluid/queer, 0.70% (n = 1) chose not to specify, and 0.70% (n = 1) were unsure or questioning their gender identity. The age distribution was primarily concentrated within the young adult bracket, with 90.35% (n = 131) aged between 18 and 24 years. The remaining participants were distributed across older age groups, with 7.59% (n = 11) between 25 and 34 years, 1.38% (n = 2) between 35 and 44 years, and 0.69% (n = 1) between 45 and 54 years. A significant proportion of the participants, 48.97% (*n* = 71), reported being first-generation college students. In terms of employment, 63.45% were engaged in part-time work or held student jobs.

The academic performance of the participants, as measured by GPA, exhibited a mean score of 3.66 with a standard deviation of 1.133 (M = 3.66, SD = 1.133). The range of GPA scores was extensive, spanning from a minimum of 1.0 to a maximum of 5.0. The

data demonstrated a slight negative skewness (-0.305), indicating a tendency towards higher GPA scores within the sample. The moderate range and variability in GPA were crucial for understanding the academic diversity of the sample. Additionally, the participants reported an average of 2.66 Adverse Childhood Experiences (ACEs) (M =2.66), with a standard deviation of 2.442 (SD = 2.442), reflecting a broad spectrum of childhood adversity within the sample. The ACE scores ranged from 0 to 9, with a median of 2, and exhibited a slight positive skewness (0.608), suggesting that a greater number of participants reported fewer ACEs. The distribution of both GPA and ACE scores, which deviated from normality as indicated by significant Kolmogorov-Smirnov and Shapiro-Wilk test results, supported the use of non-parametric tests in the analysis. This statistical approach was essential to accurately address the non-normal distribution observed in the sample's academic and experiential data. Regarding academic performance, self-reported GPA (M = 2.23, SD = 1.13) ranged as follows: 35.17% reported a GPA of 2.5 to 3.49, 31.72% reported 3.7 to 4.0, 17.93% reported 3.5 to 3.69, 9.66% reported 1.5 to 2.49, and 3.45% reported a GPA below 1.5.

Prevalence of Adverse Childhood Experiences (ACEs) by Category

The prevalence of various categories of Adverse Childhood Experiences (ACEs) was assessed among a sample of 145 participants, encompassing ten distinct ACE categories. The analysis revealed diverse prevalence rates (*see Table 2.*). Emotional Neglect was reported by a small subset of the sample, specifically 6.2% (n = 9), with a notable majority, 93.8% (n = 136), indicating no such experience. The average score for this category (M = 1.94, SD = 0.020) suggested a relative rarity of emotional neglect

among the participants. In contrast, Parental Separation or Divorce was more commonly reported, identified by 27.6% (n = 40) of the sample. However, a significant proportion, 72.4% (n = 105), did not experience it, as indicated by the mean score of 1.72 (SD = 0.037), which reflected a moderate presence of this experience.

Living with a Mentally III or Suicidal Individual was another category explored, reported by 31.7% (n = 46) of the participants. The remaining 68.3% (n = 99) did not report this experience, with the data yielding a mean of 1.68 (SD = 0.039), highlighting its moderate prevalence. Exposure to Substance Abuse was indicated by a similar proportion, 27.6% (n = 40), of the sample, while a larger portion, 72.4% (n = 105), did not report such exposure. The statistics for this category (M = 1.72, SD = 0.037) also reflected its moderate occurrence.

Witnessing Domestic Violence was reported by 24.1% (n = 35) of the sample, contrasting with the 75.9% (n = 110) who did not witness such events. The average score (M = 1.76, SD = 0.036) suggested a noteworthy incidence of this experience among the participants. On the other hand, Household Member Incarceration was a less frequent experience, reported by 14.5% (n = 21) of the participants. The majority, 85.5% (n =124), had not experienced it, and the data (M = 1.86, SD = 0.029) suggested a lower occurrence. Among the various ACEs, Emotional Abuse was the most commonly reported, with 61.4% (n = 89) acknowledging it, while 38.6% (n = 56) did not. The mean score for this category (M = 1.39, SD = 0.041) indicated its significant presence in the sample. Physical Abuse was also reported, experienced by 36.6% (n = 53) of the participants, in contrast to 63.4% (n = 92) who reported no such abuse. The statistics for this category (M = 1.63, SD = 0.040) demonstrate a notable rate of occurrence.

Feeling Unloved or Unsupported was another aspect examined, noted by 23.4% (n = 34) of the participants. A substantial majority, 76.6% (n = 111), did not report this feeling, and the average score (M = 1.77, SD = 0.035) highlighted its presence in a significant subset of the sample. Lastly, Sexual Abuse was the least reported ACE, noted by only 12.4% (n = 18) of the participants, while a predominant portion, 87.6% (n = 127), did not report such abuse. The data for this category (M = 1.88, SD = 0.027) suggests its relative infrequency or potential underreporting within the sample.

Correlation Between ACE Prevalence and GPA

A correlation analysis was performed to understand the relationship between the number of Adverse Childhood Experiences (ACEs) and the current Grade Point Average (GPA) among the sample of 145 participants. Owing to the non-normal distribution evident in both ACE scores (p < .001) and GPA (p < .001), Spearman's rank-order correlation coefficient was employed for analysis. The resultant data indicated an absence of a statistically significant correlation between the number of ACEs and the current GPA, ($\rho = .071$, p = .399) within this specific sample. This outcome suggests that the direct impact of the prevalence of ACEs on academic performance might be less profound than anticipated, thereby prompting a re-evaluation of other contributory factors to academic success.

Examining the Role of Resilience

A correlation between each set of variables was investigated using a non-parametric approach to examine whether resilience acts as a mediator between ACE scores and GPA. It was revealed that the relationship between ACE scores and resilience $(\rho = -.130, p = .119)$ and between resilience and GPA ($\rho = .001, p = .994$) were not statistically significant. This suggests a lack of foundational correlation required for a traditional mediation model.

The Influence of Perceived Stress

The study further explored perceived stress as a potential moderator in the ACEs-GPA relationship, incorporating resilience as a control variable. Employing PROCESS Model 1 (Hayes, 2022), the analysis did not yield a statistically significant overall model ($F(4, 140) = 1.70, p = .15, R^2 = .05$). However, the interaction effect between ACE Scores and Total Perceived Stress Score emerged as significant ($\beta = -.01, p = .02$), signifying a moderating role of perceived stress, especially at lower stress levels. This finding highlights the complexity inherent in the ACEs-GPA relationship and underscores the necessity of acknowledging individual differences in stress perception and coping strategies in future research.

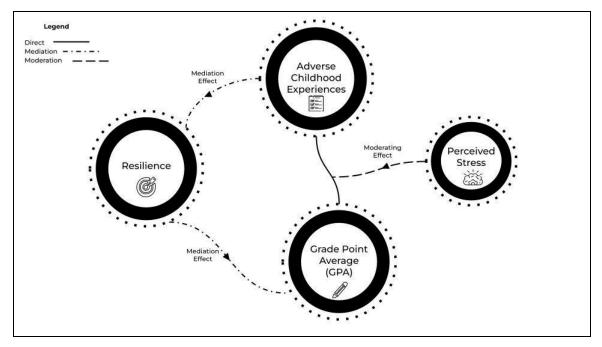
Demographic Factors

A Univariate Analysis of Variance (ANOVA) analysis was conducted to investigate the impact of demographic variables, including ethnicity, employment status, first-generation college student status, and involvement in extracurricular activities on GPA. Levene's Test indicated significant differences in variances across groups, which suggests a violation of the homogeneity of variance assumption in the ANOVA model. The model indicated a significant interaction effect (F(36, 108) = 1.792, p = .011, partial eta squared = .374), with a specific focus on the interaction between ethnicity, employment status, and extracurricular activities (F(2, 108) = 5.369, p = .006).

A Comprehensive Model

In an attempt to construct a comprehensive predictive model of GPA, a regression analysis incorporating ACE score, total resilience score, total stress score, and demographic factors was executed. The model, however, failed to reach statistical significance (F(7, 137) = .775, p = .609), explaining a mere 3.8% of the variance in GPA ($R^2 = .038$). This outcome indicates that the selected variables, either in isolation or in conjunction, do not markedly predict GPA within the studied sample. This suggests either the potential influence of unaccounted variables or the need for more refined measures to adequately capture the complexity of these interactions and their impact on academic achievement.

Figure 1



Comprehensive Model Depicting Moderation and Mediation Relationship

Discussion

This study's results paint a complex picture of how Adverse Childhood Experiences (ACEs), resilience, demographic variables, and perceived stress interact with academic success. The lack of a direct correlation between ACEs and GPA, and the non-significant role of resilience as a mediator, suggest that the pathway from childhood adversity to academic outcomes may be influenced by a broader array of factors than previously identified.

Aim 1: Prevalence of ACEs in a Diverse College Sample

Hypothesis 1a proposed that most college students would report fewer than 4 ACEs. The study revealed an average ACE score of 2.66, challenging the initial hypothesis but resonating with global trends in ACE prevalence among college students, as noted by Chen et al. (2023) and Sciolla et al. (2019). The significant presence of emotional and physical abuse in the sample is consistent with the findings of Strand et al. (2017) and Heard-Garris et al. (2018), underscoring the varied and widespread nature of these experiences in educational settings. This diversity in ACE types reflects the complexity and uniqueness of each individual's childhood experiences, challenging the notion of a predominant type of adversity and suggesting the need for personalized approaches in addressing the impacts of ACEs.

Aim 2: ACEs and Academic Achievement

The study hypothesized a negative correlation between ACEs and GPA. However, the absence of a significant direct relationship between ACE scores and GPA in the study contrasts with the extensive research linking ACEs to various negative life outcomes (Felitti et al., 1998). This suggests the presence of intervening factors like resilience and social support, as highlighted by Edwards et al. (2016) and Karatekin & Ahluwalia (2020). The lack of direct correlation might also reflect the adaptive capacities and coping mechanisms that students develop, buffering the academic impacts of ACEs.

Aim 3: Resilience as an Intermediary Variable

Resilience was explored as a potential mediator between ACEs and academic success. The finding that resilience did not significantly mediate this relationship is intriguing, given the established role of resilience in mitigating adverse outcomes (Blickenstaff et al. 2021; Brogden & Gregory 2019). This could indicate the variability and context-specific nature of resilience as a construct, suggesting that its role in academic outcomes may be more complex and less direct than previously understood.

Aim 4: Perceived Stress as a Moderator

The hypothesis that perceived stress may modify the impact of ACEs on academic performance was partially supported. The identification of stress as a moderator, particularly at lower levels of stress, aligns with the research by Karatekin and Ahluwalia (2020), emphasizing the role of stress in the context of ACEs. This underscores the need for a comprehensive approach to understanding and addressing stress among students with ACE histories, factoring in individual variations in stress perception and coping strategies.

Aim 5: Impact of Demographic Variables

The significant interaction effects involving demographic variables underscore the multifaceted nature of academic success. The influence of factors like ethnicity,

employment status, and extracurricular activities suggests a complex interplay that goes beyond the scope of ACEs alone. This complexity is echoed in the findings of Peterson and Morfoot (2022), who identified various factors impacting college students' mental health and academic performance.

Prevalence of Adverse Childhood Experiences in a Diverse College Sample

The present study revealed a substantial presence of Adverse Childhood Experiences (ACEs) among the participants, echoing the findings of similar research in educational contexts (Sciolla et al., 2019; Chen et al., 2023). The diversity in ACEs types observed, ranging from emotional neglect to physical and emotional abuse, mirrors the complex fabric of childhood adversities that permeate various demographic groups. This distribution of ACEs underscores the pressing need for academic institutions to adopt inclusive strategies that acknowledge and address the broad spectrum of adversities faced by students. The relatively high occurrence of emotional abuse in the sample aligns with the existing literature, suggesting its pervasive nature and potential impact on student well-being and academic performance.

Interplay of ACEs and Resilience

The findings did not corroborate the expected negative correlation between ACE scores and resilience, thus deviating from the trajectory outlined in previous studies (Chen et al., 2023; Sciolla et al., 2019). This unexpected outcome indicates that resilience in the context of ACEs might be influenced by a more complex set of factors than previously understood. It is possible that individual traits, familial support mechanisms, and societal factors, which were not captured extensively in this study, play a more

crucial role in determining resilience amidst childhood adversities (Heard-Garris et al., 2018; Sciaraffa et al., 2018). This deviation points to a broader landscape of resilience, one that is possibly shaped by multifarious and context-specific factors, challenging the straightforward narrative of resilience as a direct counterforce to childhood adversity.

ACEs, Perceived Stress, and Academic Outcomes

Contrasting with hypothesized expectations, the analysis indicated an absence of a statistically significant direct relationship between the prevalence of ACEs and academic performance as measured by GPA. This finding is interesting as it suggests that the academic trajectories of individuals with ACEs are not uniformly hindered by their adverse experiences. The role of perceived stress emerged as a critical component, with its moderating effect on the ACEs-GPA relationship. This aspect, particularly evident at lower stress levels, points to the significance of individual perceptions and management of stress in mediating the impact of ACEs on academic performance. The intricacies of this relationship warrant further exploration to unravel how subjective experiences of stress can alter the academic potential of individuals with diverse histories of childhood adversities.

Influence of Demographic Variables

The study's analysis of demographic variables revealed a compelling interaction effect, particularly when examining the confluence of ethnicity, employment status, and extracurricular activities in relation to GPA. This significant finding emphasizes the complexity inherent in the academic experiences of college students. It suggests that the interplay of various socio-demographic factors may offer a more comprehensive understanding of academic achievement than any singular factor, including ACEs. This intersectionality highlights the critical need for educational policies and support systems that are responsive to the multifaceted identities and experiences of students.

Policy Implications and Recommendations for Educational Practice

Given these findings, it becomes evident that institutions of higher learning must develop and implement comprehensive strategies to support students with histories of ACEs. This approach should go beyond mere recognition of ACEs to include the assessment of resilience levels, stress perceptions, and the diverse socio-demographic backgrounds of students. Such strategies may encompass the integration of trauma-informed teaching methods, resilience-building workshops, and personalized academic counseling that take into account the multifaceted nature of student experiences.

Limitations and Avenues for Future Research

The present study provides valuable insights but is constrained by its reliance on cross-sectional data, self-reported measures, and the inherent limitations of the ACEs questionnaire. The cross-sectional nature of the data limits the ability to establish causal relationships among variables such as adverse childhood experiences (ACEs), resilience, perceived stress, and academic outcomes, as it only captures a snapshot in time. This design is adequate for identifying correlations but insufficient for understanding the directionality or evolution of these relationships.

Moreover, the study utilizes self-reported data which, while useful for capturing subjective experiences, is susceptible to biases such as recall and social desirability,

potentially skewing results. The ACEs questionnaire, which forms a critical part of data collection, further limits the study due to its binary (yes/no) format. This format does not account for the severity, frequency, or duration of the trauma, which is crucial for fully understanding the impact of ACEs on individual outcomes. The lack of granularity in the ACEs questionnaire means that significant variations in individual experiences of trauma might not be adequately captured, thereby affecting the reliability of the connections drawn between ACEs and other variables such as resilience and academic success.

A critical limitation not addressed in the study's methodology concerns the absence of counterbalancing measures. There was no variation in how scales were introduced to each participant, prompting the question of whether one measure could have influenced another. This methodological oversight may have introduced additional bias into the data, potentially affecting the study's findings.

To advance the robustness of future research, it is recommended to adopt longitudinal studies that can trace the development of these variables over time, thus providing insights into causality and the dynamics of their interactions. Expanding research to include more diverse demographic settings would also enhance the generalizability and relevance of the findings, as cultural backgrounds, family dynamics, and community support systems play significant roles in resilience development and stress management. Furthermore, incorporating mixed-methods approaches could compensate for the limitations of self-reporting and the ACEs questionnaire. Qualitative data, such as detailed interviews or focus groups, could provide richer context and depth to the quantitative findings. Including a broader array of psychological and environmental factors—like mental health status, educational environments, and socioeconomic status—could offer a more comprehensive understanding of the interplay between these elements and academic performance. By addressing these methodological limitations and broadening the scope of research, future studies can yield more definitive insights and inform more effective interventions tailored to the needs of diverse student populations.

Conclusion

This study provides a more detailed perspective on the existing literature that examines the impacts of Adverse Childhood Experiences (ACEs) on academic achievement. While it does not confirm a direct causal link between ACEs and academic performance, nor does it validate resilience as a significant mediating factor, it highlights the complex nature of these relationships. The findings, particularly regarding the moderating role of stress, suggest the need for a more sophisticated understanding of how ACEs affect academic contexts.

In light of these findings, there is a clear need for educational policies and practices to be re-evaluated. Educational institutions should be urged to move away from generic interventions and towards more individualized, holistic strategies that meet the diverse needs of students, especially those with ACE backgrounds.

Furthermore, this study emphasizes the importance of continued research in this area. A deeper and more comprehensive understanding of the various factors influencing the academic journeys of students who have experienced significant early adversities is crucial. Such understanding is essential for developing effective support strategies and creating an academic environment that promotes the success of all students, regardless of their past adversities.

Tables

Table 1

Demographic Characteristics of Participants (N = 145)

Demographic Category	Frequenc	Percentage (%)
	У	
Age		
18 - 24	131	90.4
25 - 34	11	7.6
35 - 44	2	1.4
45 - 54	1	0.7
Gender		
Male	28	19.3
Female	112	77.2
Non-binary/genderfluid or genderqueer	3	2.1
I am not sure or questioning	1	0.7
Prefer not to specify	1	0.7
Year in School		
Freshman	82	56.6
Sophomore	22	15.2
Junior	22	15.2
Senior	19	13.1
Current GPA		
0 - 1.49	5	3.4
1.5 - 2.49	15	10.3
2.5 - 3.49	51	35.2
3.5 - 3.69	28	19.3
3.7 - 4.0	46	31.7
Ethnicity		
White	44	30.3

Adverse Childhood Experiences, Resiliency & Pere	42	
Black or African American	14	9.7
Hispanic/Latinx	60	41.4
Asian	22	15.2
Other	5	3.4
Employment Status		
Employed full time	15	10.3
Employed part-time/ Student Job	93	64.1
Unemployed	37	25.5
First-Generation College Student		
Yes	71	49.0
No	74	51.0
Involved in Extracurricular Activities/Clubs		
Yes	40	27.6
No	105	72.4

Note. Data based on self-reported demographic information from a sample of 145 students at Montclair State University.

Table 2

Prevalence of Adverse Childhood Experiences (ACEs) Among Participants (N=145)

ACE Category	Yes (n, %)	No (n, %)	Mean (M)	Standard Deviation (SD)
Emotional Neglect	9 (6.2%)	136 (93.8%)	1.94	.020
Parental Separation/Divorce	40 (27.6%)	105 (72.4%)	1.72	.037
Living with Mentally Ill/Suicidal Individual	46 (31.7%)	99 (68.3%)	1.68	.039
Exposure to Substance Abuse	40 (27.6%)	105 (72.4%)	1.72	.037
Witnessing Domestic Violence	35 (24.1%)	110 (75.9%)	1.76	.036

Adverse Childhood Ex	periences, Resiliency	& Perceived Stress

Household Member Incarceration	21 (14.5%)	124 (85.5%)	1.86	.029
Emotional Abuse	89 (61.4%)	56 (38.6%)	1.39	.041
Physical Abuse	53 (36.6%)	92 (63.4%)	1.63	.040
Feeling Unloved/Unsupported	34 (23.4%)	111 (76.6%)	1.77	.035
Sexual Abuse	18 (12.4%)	127 (87.6%)	1.88	.027

Table 3

Regression Analysis Outcomes for ACEs, Total Resilience Score, and GPA

Variable	Coefficient (B)	Standard Error	Beta	t	p-value	95% CI Lower Bound	95% CI Upper Bound
Constant							
ACE Score	.0330	.0390		.8458	.3991	0441	.1102
Resilience Score	.0030	.0045		.6834	.4954	0058	.0118

Table 4

Moderation Analysis of Perceived Stress in the ACEs-GPA Relationship

Variable	Coefficien t (B)	Standar d Error	Beta	t	p-value	95% CI Lower Bound	95% CI Upper Bound
Constant							
ACE Score	.06	.04		1.48	.14	02	.14
Total Perceived Stress	02	.01		-1.52	.13	04	.01

Adverse Childhood Experiences, Resiliency & Perceived Stress						44
Score						
Interaction (ACEScor e x Total_SS)	01	.01	-2.36	.02	02	.00

Total .00 .00 .48 .63 Resilience Score

Table 5

Comprehensive Regression Model Predicting GPA

Variable	Coefficient (B)	Standard Error	Beta t	p-value	95% CI Lower Bound	95% CI Upper Bound
Constant						
Ethnicity	.001	.073	.011	.991	143	.145
Employment Status	186	.175	-1.061	.290	531	.160
First-Generation College Student	.258	.194	1.326	.187	127	.642
Involvement in Extracurricular Activities	344	.227	-1.514	.132	793	.105
ACE Score	.024	.041	.575	.566	057	.104
Total Resilience Score	.002	.005	.491	.624	007	.011
Total Perceived Stress Score	5.341E-5	.008	.007	.994	015	.015

.01

-.01

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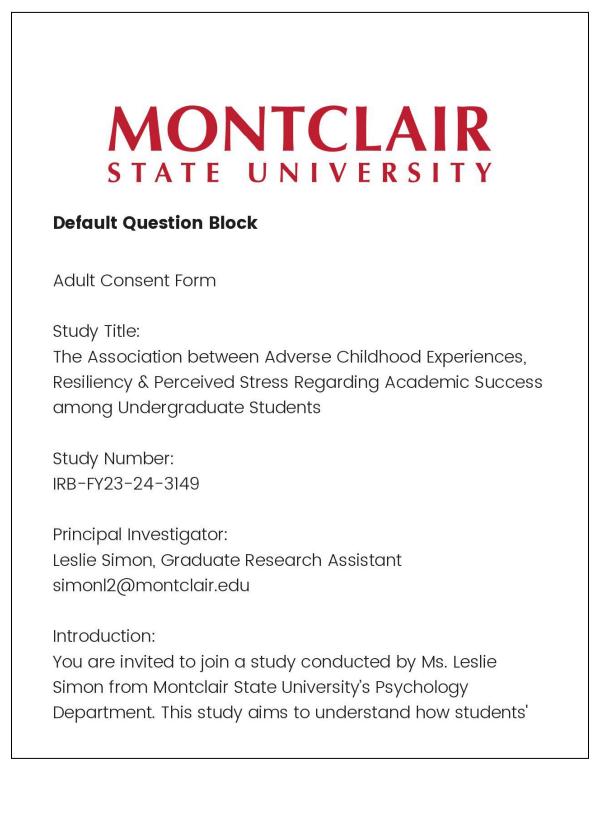
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Appendix: ACEs Qualtrics Survey



past difficult experiences and their ability to handle stress affect their school performance. We want to find ways to help students do well in college despite these challenges.

Procedures:

If you agree to participate, you will be asked to complete four surveys about: Who you are Your Childhood Your Stress Levels Your Resilience

Duration:

The study should take about 15-30 minutes to complete.

Risks and Discomforts:

Answering questions about your past or how you feel might be uncomfortable. If a question is too much, you can skip it. You can also stop being part of the study at any time. Some questions in our study may be tough to answer and may make you feel upset or uncomfortable. If you are feeling this way, it's really important to talk to someone who can help.

Crisis Resources at Montclair University: Counseling and Psychological Services (CAPS) Phone: (973) 655-5211 Website: https://www.montclair.edu/counseling-andpsychological-services/ Montclair State University 24/7 Crisis Hotline Phone: 973-655-5211 and select option "2" to be immediately connected to a licensed mental health clinician.

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Crisis Resources at Kean University:
Counseling Center
Phone: (908) 737- 4850
Website: https://www.kean.edu/offices/counseling-center
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Kean University 24/7 Crisis Hotline Phone: (833) 646-1526

National Hotline For Mental Health Crises And Suicide Prevention Phone: 988

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Crisis Text Line
Text HOME to 741741 to reach a volunteer Crisis Counselor.
Website: https://www.crisistextline.org/
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Benefits:

There's no direct benefit to you, but your participation will add to research that might help others in the future.

Compensation:

You'll receive two (2) SONA credits for your time that count

towards your study requirements at either Montclair State University or Kean University.

Confidentiality:

We'll keep your answers secret and safe. Only our research team will see them. We won't share your individual answers when we talk or write about the study results.

Eligibility Requirements:

You must be a current undergraduate student enrolled at Montclair State University (MSU) or Kean University, at least 18 years old, and proficient in English. Students of Dr. Nahin (MSU), Dr. Fuentes (MSU), or Dr. Turner (KU) are ineligible for this study.

Voluntary Participation:

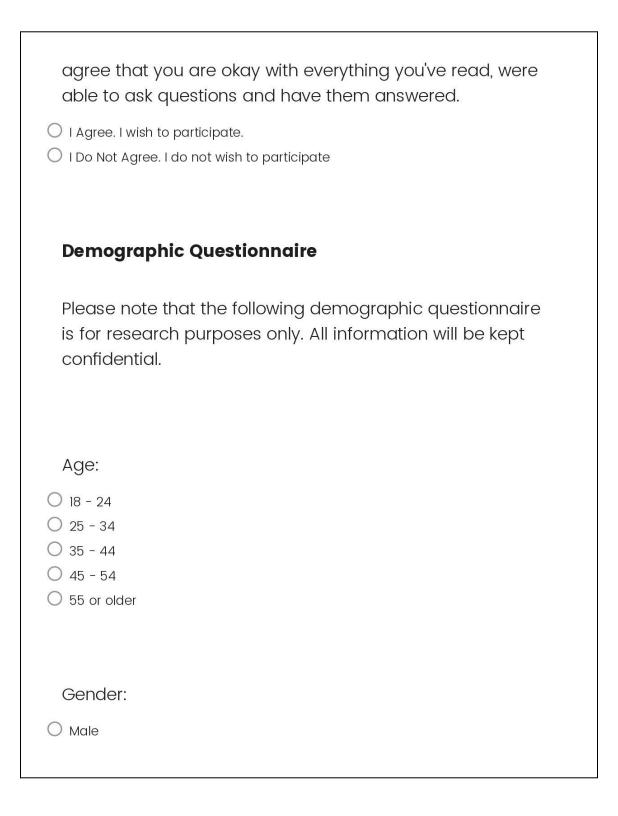
It's your choice! You're free to decide if you want to be in the study. Saying no won't affect your grades or standing at the university.

Contact Information:

Contact Leslie Simon at simonl2@montclair.edu or Dr. Erica Nahin at nahine@montclair.edu

Consent Statement

This study has been approved by the MSU Institutional Review Board. By clicking the "I Agree" button below, you



 Female Non-binary / genderfluid or gender queer I am not sure or questioning Prefer not to specify
Do you identify as transgender?
O Yes
O No
 I am not sure Prefer not to specify
Major:
Year in School:
O Freshman
O Sophomore
 Junior Senoir

Current GPA:

0 - 1.49

0 1.5 - 2.49

0 2.5 - 3.49

0 3.5 - 3.69

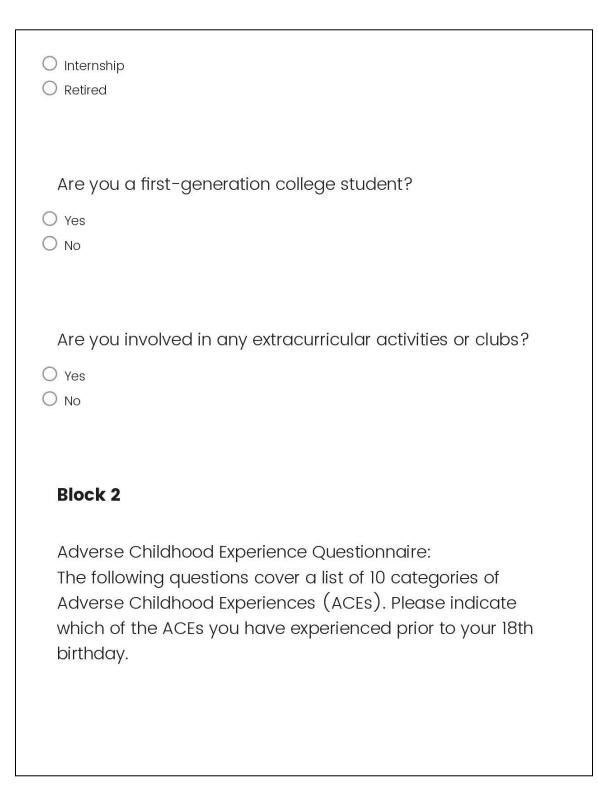
0 3.7 - 4.0

Ethnicity:

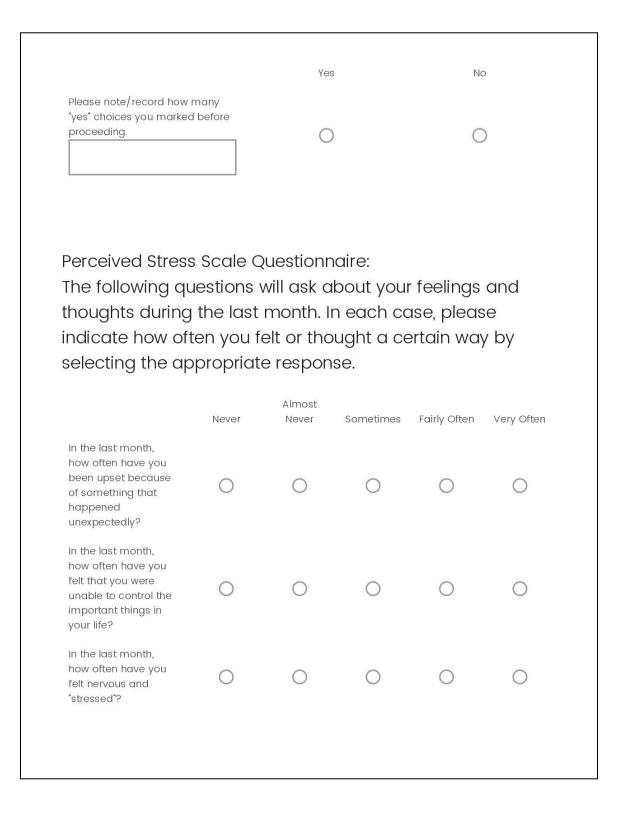
- O White
- O Black or African American
- O Hispanic/Latinx
- O Asian
- 🔘 American Indian or Alaska Native
- \bigcirc Native Hawaiian or Pacific Islander
- O Other

Employment Status:

- O Employed full time
- Employed part time/ Student Job
- O Unemployed



	Yes	No	
Did you feel that you didn't have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you?	0	0	
Did you lose a parent through divorce, abandonment, death, or other reasons?	0	0	
Did you live with anyone who was depressed, mentally ill, or attempted suicide?	0	0	
Did you live with anyone who had a problem with drinking or using drugs, including prescription drugs?	0	0	
Did your parents or adults in your home ever hit, punch, beat, or threaten to harm each other?	0	0	
Did you live with anyone who went to jail or prison?	0	0	
Did a parent or adult in your home ever swear at you, insult you, or put you down?	0	0	
Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?	0	0	
Did you feel that no one in your family loved you or thought you were special?	0	0	
Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal	0	0	



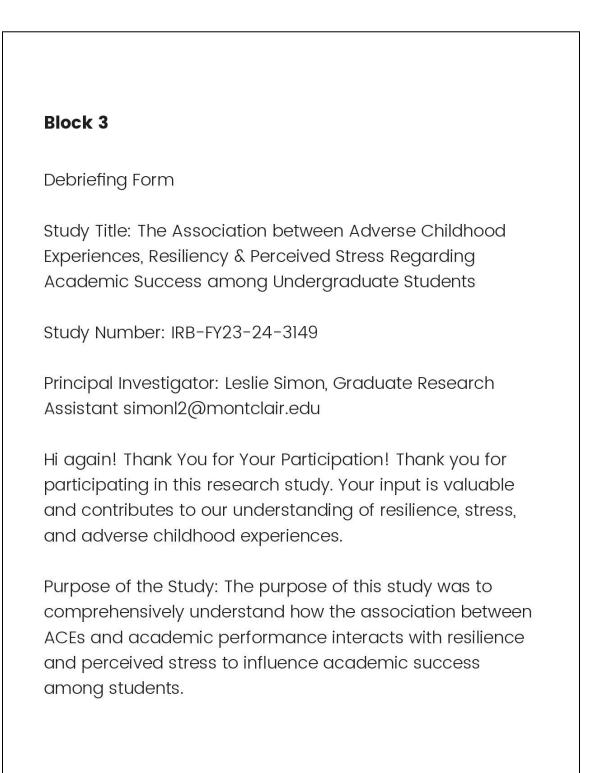
	Novor	Almost	Comotimos	Eqiply Ofton	Van/ Often
	Never	Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you felt confident about your ability to handle your personal problems?	0	0	0	0	0
In the last month, how often have you felt that things were going your way?	0	0	0	0	0
In the last month, how often have you found that you could not cope with all the things that you had to do?	0	0	0	0	0
Select "Almost Never"	\bigcirc	\bigcirc	0	\bigcirc	0
In the last month, how often have you been able to control irritations in your life?	0	0	0	0	0
In the last month, how often have you felt that you were on top of things?	0	0	0	0	0
In the last month, how often have you been angered because of things that were outside of your control?	0	0	0	0	0

	Nev		Almost Never	Sometim	nes Fairly O	ften	Very Often	
In the last month, how often have you felt difficulties were piling up so high the you could not overcome them?	it C)	0	0	0		0	
Resilience Scale Questionnaire: Below are 25 statements that relate to your personal attitudes and feelings. Please indicate how much you agree with each statement by selcting the appropriate response.								
	Disagree	Disagree	Neutral	Agree	disagree	Agree	Agree	
When I make plans, I follow through with	\bigcirc	\sim						
them.	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	
them. I usually manage one way or	0	0	0	0	0	0	0	
them. I usually manage one way or another. I am able to depend on myself more than	0	0	0	0	0	0	0	
them. I usually manage one way or another. I am able to depend on myself more than anyone else. Keeping interested in things is	0	0	0	0	0	0	0	

	Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat disagree	Agree	Strongly Agree
l can be on my own if l have to.	0	0	0	0	0	\bigcirc	0
I feel proud that I have accomplished things in my life.	0	0	0	0	0	0	0
I usually take things in stride.	\bigcirc	0	0	0	0	\bigcirc	0
I am friends with myself.	\bigcirc	0	0	0	0	0	0
I feel that I can handle many things at a time.	0	0	0	0	0	0	0
I am determined.	0	0	0	\bigcirc	0	0	0
I seldom wonder what the point of it all is.	0	0	0	0	0	0	0
I take things one day at a time.	0	0	0	0	0	\bigcirc	0
I can get through difficult times because I have experienced difficulty before.	0	0	0	0	0	0	0
I have self- discipline.	\bigcirc	0	0	0	0	\bigcirc	0
I keep interested in things.	0	0	0	0	0	0	0
l can usually find something to laugh about	0	0	0	0	0	0	0

-

	Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat disagree	Agree	Strongly Agree
My belief in myself gets me through hard times.	0	0	0	0	0	0	0
In an emergency, I am someone people generally can rely on.	0	0	0	0	0	0	0
I can usually look at a situation in a number of ways.	0	0	0	0	0	0	0
Sometimes I make myself do things whether I want to or not.	0	0	0	0	0	0	0
My life has meaning.	0	0	0	0	0	0	0
I do not dwell on things that I can't do anything about	0	0	0	0	0	0	0
When I am in a difficult situation, I can usually find my way out of it.	0	0	0	0	0	0	0
I have enough money to do what I have to do.	0	0	0	0	0	0	0
It's OK if there are people who don't like me.	0	0	0	0	\bigcirc	0	0



If You Feel Distressed: We understand that some of the questions in this study may have been sensitive or potentially distressing. If you feel distressed or uncomfortable due to your participation, we strongly encourage you to seek support.

Crisis Resources at Montclair University: Counseling and Psychological Services (CAPS) Phone: (973) 655-5211 Website: https://www.montclair.edu/counseling-andpsychological-services/

Montclair State University 24/7 Crisis Hotline Phone: 973-655-5211 and select option "2" to be immediately connected to a licensed mental health clinician.

Crisis Resources at Kean University: Counseling Center Phone: (908) 737- 4850 Website: https://www.kean.edu/offices/counseling-center

Kean University 24/7 Crisis Hotline Phone: (833) 646-1526

National Hotline For Mental Health Crises And Suicide Prevention Phone: 988

Crisis Text Line: Text HOME to 741741 to reach a volunteer Crisis Counselor. Website: https://www.crisistextline.org/

Confidentiality: Please be assured that all your responses will be kept confidential and will only be used for research purposes only.

Further Questions: If you have any further questions about the study, please feel free to contact Ms. Leslie Simon at simonl2@montclair.edu or Dr. Erica Nahin at nahine@montclair.edu

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