Resilience and Drinking Behaviors in Emerging Adults with Previous Extracurricular Participation

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Abstract

Incorporating a Positive Youth Development framework, this study sought to demonstrate how adolescent extracurricular participation facilitated resilience development and promoted long-term behavioral and educational benefits into emerging adulthood. Resilience was previously identified as a protective factor and promoter of advantageous life outcomes despite childhood adversity. Data were collected from 281 participants aged 18 to 25 across over 50 American universities and trade schools. The resulting correlational analysis suggested that extracurricular participation had a significant positive correlation with resilience ($r = .23$, $p < .001$). Moreover, this resilience was negatively associated with binge drinking ($r = -.23$, $p < .001$) and positively associated with higher educational attainment ($r = .24$, $p < .001$). A path analysis was performed based on a PYD-informed model: χ^2 (6) = 29.84, $p < .001$, Comparative Fit Index (CFI) = .96, Tucker-Lewis Index (TLI) = .91, Root Mean Square Error of Approximation (RMSEA) = .11 (90% CI [.08, .16]), and Standardized Root Mean Square Residual (SRMR) = .09. The results suggested a moderate fit. The analysis confirmed that extracurricular participation is linked to greater resilience, which in turn supports positive life outcomes in emerging adulthood, regardless of childhood adversity. These findings encourage further research incorporating intentional resilience-building into established extracurricular activities as a method of extending developmental benefits to underserved communities.

Keywords: resilience, extracurricular participation, emerging adulthood, Positive Youth Development

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Few contemporary high school archetypes have entered the cultural consciousness quite like the "model student." As prestigious universities faced thousands more qualified applicants than available seats, admission committees used extracurricular involvement to predict future success. In response, student extracurricular participation grew at record rates (Mayol-García, 2022). However, data analysis of over six million college applications revealed that historically privileged demographics: White, high socioeconomics, and private school educated reported significantly more extracurricular participation, leadership positions, and awards (Park et al., 2023).

Nevertheless, viewing extracurricular participation solely to impress college admissions would be reductive. The admissions shift toward valuing these activities emerged due to their long-documented association with positive developmental outcomes (Agans et al., 2014; Busseri et al., 2006; Forneris et al., 2015). It has been well-established that extracurricular participation is an impactful part of American students' development as it has repeatedly been linked to school success and decreased behavioral issues (Martin et al., 2013; Weitzman & Chen, 2005). Notably, extracurricular participation has been demonstrated as particularly developmentally beneficial for youths exposed to adverse events (Mahoney & Cairns, 1997). While highly influential during adolescence, the long-term impact of extracurricular participation has yet to be thoroughly explored. There remain unanswered questions regarding the durability of these effects and whether such participation contributes to enduring behavioral patterns into emerging adulthood.

Emerging Adulthood

Emerging adulthood, ages 18-25, was conceptualized to describe shifting timelines for major life milestones across generations (Arnett, 2014). Though legally adults, individuals in this age range are typically in the early stages of establishing their adult independence. In the past, it was common to marry and have children during the mid-twenties; however today the average marriage age is 30 for US men and 28 for US women (U.S. Census Bureau, 2023). Despite the shift, typical US adults still leave their parents' homes between the ages of 18-19 and do not enter the workforce until their late twenties (Arnett, 2014). This delayed transition has created an extended developmental period characterized by increased autonomy, identity exploration, and self-focus. Across 300 interviews, Dr. Jeffery Arnett conceptualized emerging adulthood by classifying five typical developmental experiences: identity exploration, instability, self-focus, feeling "in-between", and optimism (Arnett, 2014). While an exciting time, this period is also associated with increased substance use. A 45 year-long longitudinal study found that substance use peaked during this time across generations (Schulenberg et al., 2020).

Binge Drinking

Binge drinking has remained a common occurrence among emerging adults as supported by a nationally representative study of more than 50,000 college students. About two in five students reported drinking at binge levels at least once every two weeks (Wechsler & Kuo, 2000). Intoxication has also been frequently found among young adults as 48% of college student drinkers reported that reaching drunkenness was their main motivation for drinking, 23% drank more than ten times a month, and 29% became intoxicated more than 3 times a month (Wechsler & Nelson, 2008). Moreover, a clear association between binge drinking and frequent drinking has been established in this age range. In a survey of American college students, 64% of drinkers met criteria for both binge drinking and weekly drinking. Only 19% of drinkers

qualified as binge drinkers alone and 17% were weekly drinkers only (DeMartini & Carey, 2012). Frequent binge drinking in emerging adulthood has been linked to neural structural changes, academic decline, increased criminal behavior, and future substance use disorder (Pérez-García et al., 2022).

Adverse Childhood Experiences

In 1998, Felitti et al. sought to determine if events in childhood correlated with later health complications. After analyzing health data from nearly 10,000 adults, the research team identified ten traumatic childhood experiences that had a significant dose-response relationship with later serious health complications. Over 50% of respondents reported one or more Adverse Childhood Experiences (ACEs), while around 25% reported two or more ACEs. People who reported four or more ACEs were 4-12 times more at risk for substance use disorder, depression, and suicide; 2- 4 times more at risk for smoking, sexually transmitted diseases, and poor health; and 1.4-1.6 times more at risk for obesity (Felitti et al., 1998). This study marked the first empirical linkage between childhood experience and later health outcomes.

Challenges Linked to ACEs

Since the original publication, studies across healthcare, education, and social science disciplines have used Adverse Childhood Experiences to quantify childhood adversity. ACEs have consistently correlated with negative physical, mental, and interpersonal consequences if left without intervention (Howell et al., 2021). An analysis of over 1000 children in the Fragile Families and Child Wellbeing Study found that 55% of the children were exposed to at least one ACE and 12% experienced more than three (Jimenez et al., 2016). Generational ACE impact literature from Howell et al. (2021) suggested that ACEs limit skills acquisition opportunities

and lead to self-blame or externalizing behaviors. ACE exposure was found to correlate with lower social emotional learning capabilities, low affection parent-child relationships, and more frequent behavioral and emotional problems during childhood (Howell et al., 2021). A 2024 meta-analysis found that ACE-exposed young adults reported significantly more psychosocial problems than their peers (Silva et al., 2024). These internal struggles have been shown to externalize as risk taking behaviors (Felitti et al., 1998). Adults with higher ACE exposure displayed significantly decreased emotional regulation and self-regulation abilities which have been linked to poor decision making (Silva et al., 2024).

Positive Youth Development

After the ACE study solidified that health consequences can originate from disrupted childhood development, researchers sought ways to protect the process. Educators soon recognized the significant amount of time children spend in school, and research began emphasizing childhood development enhancements through school-based programming. This initiated the Positive Youth Development (PYD) movement which holds the position that all children hold innate strengths that can be intentionally developed (Martin et al., 2013). The goal of PYD is not to eliminate challenges but instead introduce age-appropriate challenges that allow youths to practice positive personal agency (Romer & Hansen, 2021). The leading model of PYD, known as the five characteristics or "5 C's," describes five core traits needed to facilitate holistic youth development. These C's are connection, competence, character, caring, and confidence (Lerner, 2004). Collectively, these traits have helped youths foster relationships, hone cognitive and motor skills, solidify moral judgment, display empathy, and build self-esteem. One longitudinal study demonstrated that these five traits helped youths successfully navigate challenges which in turn promoted well-rounded development (Bowers et al., 2010).

Furthermore, research found that individual positive development most effectively occurred when expressing these characteristics through community interactions, making prosocial approaches crucial for development (Romer & Hansen, 2021).

Extracurricular Participation

For school aged children, extracurricular activities are any regularly occurring, planned activities that occur outside of required academics. Although not required, extracurricular participation has become a staple of the American education system. As of 2015, over 80% of 7-12 graders participated in at least one organized extracurricular activity (Grover et al., 2015). The most popular include athletics, arts, special interest clubs, and service-based organizations (Grover et al., 2015).

Researchers have identified seven factors of extracurricular activities that contribute to beneficial adolescent development. These factors include physical and psychological safety, supportive interpersonal relationships, regular structure, opportunities for social belongingness, skill building challenges, self-efficacy discovery, and collaboration between school, family, and community (Gardner et al., 2012). Given the theoretical similarities between these factors and PYD's 5 C's, increasing extracurricular participation has become a core Positive Youth Development intervention.

Benefits Linked to Extracurricular Participation

Research has sought to validate PYD's approach by quantifying participation benefits. One longitudinal study collected 5 C's, behavioral, and extracurricular data from 927 students during middle and high school. Students who consistently participated in extracurricular activities scored significantly higher on all five characteristics, particularly competence and

connection. However, the findings on participation and behavioral decisions were mixed. More involved students did not report significantly less substance use but did refrain from risky behaviors more often than less involved peers (Agans et al., 2014).

Academically, activity outside of the classroom has positively correlated with performance inside the classroom. In a study of 643 students spanning from elementary school through high school, extracurricular participation correlated positively with class participation rates, adaptive motivation, meaningful class engagement, and academic satisfaction after controlling for socioeconomic status (Martin et al., 2013). Furthermore, extracurricular participation has also been found to encourage school completion. In another longitudinal study following 392 students from 7th grade until 12th grade, at-risk students who participated in extracurricular activities dropped out of school significantly less than at-risk peers who did not participate (Mahoney & Cairns, 1997). A more recent study of 545 students had similar results. Students who regularly participated in extracurriculars had significantly less risk of dropout, but those who attended activities infrequently had similar dropout rates to students who did not participate at all (Thouin et al., 2022). Crucially the threshold for this protective factor was attainable for most students as students only had to participate in one activity for at least two hours weekly to significantly decrease dropout risk (Thouin et al., 2022).

Importantly, environments that included adult mentors who engaged with the participants were found to facilitate social-emotional learning more effectively (Almeida et al., 2023). Mentors provide leadership to extracurriculars, often being the person to define an activity's culture. A mentor's positive or negative dynamic with participants has been shown to be one of the determining factors in youths' decision to continue participation (Dworkin, 2007). Even within participating samples, youths who had strong mentorship bonds with teachers had

significantly higher academic achievement and lower disciplinary action compared to youths without bonds (Crosnoe et al., 2004). Likewise, Choi et al. (2015) found that the most successful mentors built authentic rapport with their participants which engendered mutual trust. With this bond, mentors integrated prosocial lessons such as good sportsmanship and conscientiousness into their coaching. Participants and their parents endorsed increased participant confidence, competence, and life skills that translated on and off the field (Choi et al., 2015).

From a PYD perspective, it is hypothesized that these behavioral benefits are facilitated through the self-regulation skills developed during extracurricular participation. Self-regulation is one's ability to mediate internal states despite external stimuli. This homeostatic responsibility extends across psychobiological processes including controlling circadian rhythms, behavioral reactivity, and goal-directed action (Gestsdottir & Lerner, 2007). Proponents of PYD suggest that extracurricular activities allow self-regulation skills to develop through providing a safe environment for youth to experiment with self-directed behavior and appropriate adaptive coping to activity-based challenges. It is believed that this process is behaviorally reinforcing as positive adaptive self-regulation is rewarded through successful goal completion (Gestsdottir & Lerner, 2007). Participants echoed this sentiment reporting more ease building relationships, collaborating with people of diverse backgrounds, and resisting peer pressure (Forneris et al., 2015). A Gestsdottir and Lerner (2007) study of over 1,000 extracurricular participating youths found self-regulation scores positively correlated with the 5 C's of PYD and negatively correlated with known risk behaviors. A follow up analysis of 2,357 high schoolers indicated that self-regulation ability once again correlated with PYD signifiers and negatively predicted substance use, depression symptoms, and problem behaviors in youth (Gestsdottir et al., 2010).

Challenges from Extracurricular Participation

While research has shown extracurricular activities offer adolescents benefits across academics and personality development, participation may also have social consequences. Bullying within peer groups and unsupportive adult leaders were the leading causes of dissatisfaction. Youths reported quitting extracurriculars as a result and thus lost access to the possible developmental opportunities (Dworkin, 2007). Additionally, some extracurriculars may expose participants to performance pressures and associated mental health risks. US youth who played team sports displayed significantly lower conduct problems, anxiety symptoms, depression symptoms, peer conflict, and concentration issues than youths who did not participate. However, youths who played individual sports showed significantly greater anxiety and depression scores, social withdrawal, and attention issues (Hoffmann et al., 2022). Another study found sports participation as a whole was not associated with internalizing symptoms however increased frequency and perceived incompetency were positively associated with internalizing symptoms amongst athletes. (Carter et al., 2023). Finally, extracurricular participation may reinforce socioeconomic advantages. In a study of music and athletic-based extracurriculars, it was found that youths from families with higher education levels experienced greater cognitive benefits than peers who came from less educated families (Bering & Schulz, 2024). While research has shown that extracurricular participation particularly enhances development for participants with higher ACE exposure, socioeconomic status may prevent children from fully committing to activity participation (Gardner et al., 2012).

Resilience

Resilience is a non-fixed trait that allows a person to adapt, overcome, and thrive after facing adversity (Connor & Davidson, 2003). Self-efficacy often precedes resilience as self-efficacy's goal-directed decision-making abilities are essential for resilience (Hamill, 2003).

Beyond its definition as a personality trait, resilience has also been hypothesized to be a measure of an individual's ability to successfully cope in high stress situations. Unmanaged chronic stress can lead to negative health implications and lower quality of life (Felitti et al., 1998; Felix et al., 2019). Resilience may be crucial to overcoming adversity without gaining increased risk for poor life outcomes (Campbell-Sills et al., 2006). A representative undergraduate sample had their coping styles, personality traits, and resilience assessed. Coping styles were split between task-oriented and emotion-oriented coping. While both types of coping correlated with resilience, task-oriented coping correlated more significantly (Campbell-Sills et al., 2006). Moreover, through the creation of the Connor Davidson Resilience scale (CD RISC), it was found that resilience was strongly negatively associated with stress (Connor & Davidson, 2003). These findings further endorse resilience's active role in coping.

Resilience in Context of ACE-Exposed Individuals

As ACE exposure positions people in high stress environments, it is necessary for individuals to effectively cope. However, research has shown that resilience was less likely to naturally develop in individuals with ACE exposure (Howell et al., 2021). Longitudinal studies assessing ACE exposure and life outcomes found that ACE exposure significantly negatively correlated with both resilience and posttraumatic growth in adulthood. Moreover, these deficits were greater in individuals who were exposed to ACEs at younger ages (Howell et al., 2021).

Evidence has suggested resilience is a key factor against the negative developmental consequences of ACE exposure. In studies particularly addressing ACE-exposed youth, resilience significantly correlated with decreased stress symptoms and predicted age-appropriate development. These were meaningful findings as that same study found that ACE-exposed youth reported significantly greater trauma symptoms and qualified for a PTSD diagnosis more

frequently than non-exposed youths (Bethell et al., 2014). This protective factor has been observed in emerging adulthood. Schaefer et al. (2018) found resilience correlated with prosocial attitudes in ACE-exposed people as they transitioned to college. These emerging adults with greater resilience also reported higher optimism, posttraumatic growth, and improved familial bonds.

Drinking Behaviors Related to Resilience

Trauma exposure studies have explored resilience as a protective factor against substance use. For three years, 1,810 adolescents were surveyed annually about substance use, family risk factors, and adverse events. Regardless of the number of adverse effects faced, those who reported higher resilience also reported significantly less substance use (Wills et al., 2001). Likewise, a buffering effect was found between resilience and alcohol use in the aftermath of trauma. Over 6,000 students were surveyed throughout their college years on alcohol use, alcohol use disorder symptoms, resilience, and newly occurring traumatic experiences. Those who reported a newly occurring traumatic experience also reported significantly more alcohol use and alcohol dependence. However, for those who reported higher amounts of resilience, increased alcohol use reported after new trauma was significantly reduced (Cusack et al., 2023). These findings suggest that resilience may decrease the stress induced motivations that increase drinking behaviors.

Current Study

While PYD research has frequently studied current adolescent extracurricular participants, there is limited research into the duration of developmental impacts. Particularly there is interest in whether these attitudes and behaviors developed during high school last

through the highly transformative period of emerging adulthood. Self-efficacy and self-regulation have been identified as general contributors to lifelong well-being and their development has been directly linked to extracurricular participation (Agans et al., 2014; Forneris et al., 2015; Gestsdottir & Lerner, 2007). Across psychology and education research, self-efficacy and resilience have been repeatedly found to have a strong positive correlation in high school students and emerging adults, with some results suggesting these traits may strengthen each other (Hamill, 2003; Konaszewski et al., 2021; Qamar & Akhter, 2020).

The Positive Youth Development theoretical framework assumes that personality and behavioral patterns developed during adolescence have lasting impact into adulthood. While the current study aims to add to the literature in this regard, other studies have previously provided findings to support this trajectory. Haider and van Stumm (2022) found emerging personality traits like conscientiousness recorded during adolescence correlated with greater academic attainment and performance in emerging adulthood. When compared to intelligence and socioeconomic status, personality traits during adolescence were found to be the strongest and most consistent predictors of adult life outcomes. Furthermore, a 12-year longitudinal study recorded adolescents' personality trait development and educational careers path yearly. It was found that those who developed greater amounts of emotional stability, conscientiousness, and extraversion reported significantly greater income, job, and career satisfaction during adulthood (Hoff et al., 2021).

Only a single study, by Gardener et al. (2008), has examined how previous extracurricular activity in high school affected life outcomes in emerging adults. This study limited its focus to educational and occupational attainment. The project evaluated data from the National Education Longitudinal Study, which consisted of a nationally representative sample of

24,599 8th graders surveyed again in 10th grade, 12th grade, and eight years after high school graduation. It was found that students who participated in school sponsored extracurricular activities during high school reported significantly higher grades and college attendance even after accounting for previous grades and confounding socioeconomic variables. Intensity of participation mattered as well. For every year of extracurricular participation in high school, the odds of being employed full time after graduation increased by 8% and those who participated for at least two years during high school had a 54% greater chance of attending college. Overall, students who participated more frequently in extracurricular activities attained greater educational and occupational outcomes (Gardner et al., 2008).

The current study aims to build upon the previous literature by examining both the attitudes and behaviors of those who participated in previous extracurricular activity as they enter adulthood. Notably, this study investigates the duration and specific behavioral manifestations of the developmental benefits that have been previously associated with involvement, both of which are unexplored within Positive Youth Development literature. Additional examination of extracurricular participation and positive youth development impact will be evaluated in context of childhood adversity. It is hypothesized that resilience, educational attainment, and less frequent binge drinking in emerging adulthood will positively correlate with the amount of previous extracurricular participation. Moreover, it is expected that ACEs will positively correlate with more frequent binge drinking and lower educational attainment, if not paired with extracurricular participation and increased resilience. As such, resilience is hypothesized to be a direct outcome of adolescent extracurricular participation and a mediator between extracurricular participation and positive outcomes in emerging adulthood.

Method

Sample

The sample contained emerging adults ages 18-25 (N = 281). Of the respondents, 60.5% identified as female, 38.4% identified as male, and 1.1% identified as non-binary. As for ethnic identity, 64.1% of respondents were White, 12.5% were Asian American, 10.8% were Black, 9.3% were Latino, 1.5% were Pacific Islander and 1.8% identified as other. All participants entered their age to verify only emerging adults were participating (M = 21.85, SD = 2.17).

The collected sample was made of particularly high achieving emerging adults, possibly due to self-selection bias or internet recruitment sampling bias. To quantify achievement, educational attainment was defined as the highest level of education received, and college GPA data were collected. Of the respondents, 0.4% reported a partial high school education, 25.6% reported a completed high school education, 32.4% reported a partial bachelor's degree, 24.6% reported a completed bachelor's degree, 17.1% reported a partial graduate degree. This study was open to a wide spectrum of emerging adults to gain a greater perspective of life outcomes across US regions and backgrounds. Participants were able to voluntarily submit the name of the last educational institution they attended, including universities or vocational centers. Participants originated from over 50 institutions including multiple Ivy League and R1 universities. Beyond three-fourths of the sample pursuing higher education, the average college GPA (M=3.61, SD=0.42) exceeded the typical population. The 50th percentile was 3.70, and the mode was 4.0 on a 4-point scale. This expansive sample was made possible by online survey recruitment. The researcher used the online platforms LinkedIn, CampusGroups, Reddit, and Instagram to spread the survey to social circles of emerging adults. These adults were then encouraged to spread the survey to their networks of peers ages 18-25.

Materials

The survey contained 35 questions divided into 4 subsections. The first survey section gathered demographic information from the participants including gender, age, ethnicity, educational attainment, college GPA (if applicable), number of high school extracurriculars, number of years participated, type of athletic/ non-athletic activity, fraternity or sorority affiliation, and current group activity participation. Questions pertaining to the type of activity and intensity of participation were asked to remedy gaps in the literature specifically mentioned in previous studies (Kort-Butler & Martin, 2015). As described by Fischer et al. (2020), there have been multiple approaches to quantifying extracurricular participation. Given that each activity differs, and students have their own attendance records, successful measurements of participation reflect temporal and categorical involvement. As such, the current study collected data on the number of years participated in at least one extracurricular and how many different extracurriculars each respondent was involved in. The extracurricular participation questionnaire can be viewed in the Appendix at https://osf.io/spr52.

The second section contained the Connor Davison Resilience Scale 10 (CD-RISC 10) (Connor & Davidson, 2003). This unidimensional scale has 10 items on which respondents choose their level of agreement on a 5-point scale. The options include not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all of the time (4). The sum of these items was taken to create an overall resilience score. Psychometrically, it was validated at three undergraduate institutions. The CD-RISC 10 has good internal consistency with a Cronbach's alpha of 0.86 (Kuiper et al., 2019). Third party review supports its use for resilience quantification (Campbell-Sills & Stein, 2007).

The third section consisted of the Adverse Childhood Experiences (ACE) scale (Felitti et al., 1998). This scale has 10 items listing possible adverse events. Respondents answer yes (1) or

no (0) if that event happened to them during their first 18 years of life. The ACE scale has acceptable internal consistency with a Cronbach's alpha of 0.70 (Oláh et al., 2023). Research has shown that scores of 4 or more correspond significantly with negative health outcomes (Felitti et al., 1998). It is imperative to understand that this score is meant to assess trends and that no one score should be used to quantify a specific individual's risk (Narayan et al., 2021).

The final section held the Alcohol Use Disorders Identification Test-Concise (AUDIT-C) (Bush et al., 1998). The AUDIT-C was modified from the full version to be able to assess risky drinking behaviors effectively but quickly. This is a three-item scale that asks how frequently people drink, the typical number of drinks consumed on days they do drink, and how often people drink 6 or more drinks in a single occasion (Bush et al., 1998). The AUDIT-C has good internal consistency with Cronbach's alpha of 0.81 (Reinert & Allen, 2007). Not only was this scale psychometrically validated for use, but it also performed more effectively than the full version for screening college aged samples (Bush et al., 1998; DeMartini & Carey, 2012).

Procedure

Prior to data collection, this study received institutional review board approval. Participants were first directed to an informed consent page. After giving voluntary consent, participants completed a demographics questionnaire, extracurricular participation questions, the Connor Davison Resilience Scale 10 (CD-RISC 10), the Adverse Childhood Experiences Scale (ACE), and the Alcohol Use Disorders Identification Test-Concise (AUDIT-C). For the current study, participants' CD-RISC 10 scores were used to quantify their overall resilience, ACE scores were used to quantify adverse childhood experience exposure, and the sum of typical number of drinks consumed per night drinking and binge drinking frequency were used to quantify regular heavy drinking. Previous extracurricular participation (PEP) was determined by

the number of high school extracurricular activities reported by participants. Once data collection concluded, the researcher used statistical analysis software including SPSS, R, and lavaan packages to assess trends. Procedures included correlation calculations and path analyses. A path analysis was performed to fit participant data to a model which depicted a possible way previous extracurricular participation (PEP), resilience, and Adverse Childhood Experiences (ACEs) can influence life outcomes and drinking behaviors in emerging adults.

Results

General Life Outcome Correlations

The researcher performed correlational analysis to determine if there were associations between previous extracurricular activity, resilience, and behaviors in emerging adulthood *(see Table 1).* Overall, 96.4% (n=271) of respondents participated in at least one extracurricular activity during high school. The number of previous extracurricular activities was found to positively correlate with resilience ($r = .23$, $p < .001$) and current extracurricular participation ($r = .66$, $p < .001$). The number of previous extracurriculars had a weak negative correlation with ACEs ($r = -.19$, $p = .001$). The number of years spent participating in extracurriculars was found to positively correlate with college GPA ($r = .22$, $p = .001$). Correlations found through this study's naturalistic approach suggest that relationships between previous extracurricular participation and life outcomes are present across widely varying activities.

Resilience Correlations

Resilience was found to positively correlate with educational attainment ($r = .24$, $p < .001$) and negatively correlate with binge drinking ($r = -.23$, $p < .001$), regular heavy drinking ($r = -0.21$, $p < .001$), and ACEs ($r = -.20$, $p < .001$). These findings suggest that those with

greater resilience tend to participate in extracurriculars more in high school, attain higher education, and participate in less risky drinking behaviors than people with less resilience. Moreover, when assessing the correlations of drinking behaviors, heavy drinking was found to correlate significantly with resilience at (r = -.21, p < .001), but drinking frequency did not significantly correlate with resilience. These findings suggest those with high and low resilience tend to drink at a similar frequency, but those with higher resilience tend to drink in moderation when they do drink compared to those with less resilience. Age was not found to significantly correlate with resilience or drinking behaviors.

ACEs Correlations

In addition to previously mentioned associations, ACEs were found to negatively correlate with years spent participating in extracurriculars (r = -.13, p = .03) and educational attainment (r = -.17, p = .006). ACEs positively correlated with binge drinking (r = .32, p < .001) and regular heavy drinking (r = .33, p < .001). The findings suggest that those with higher ACEs tend to participate in extracurriculars less frequently, attain higher education less frequently, be less resilient, and participate in riskier drinking behaviors more often than those with less ACE exposure.

Path Analysis

A path analysis was conducted to examine the relationships between PEP, ACEs, and resilience on high achieving emerging adults' life outcomes and risky drinking. The proposed path model expected resilience to mediate participation, ACE exposure, and life outcomes. Participation and ACE exposure initiated indirect pathways in which resilience influenced later drinking behaviors and educational attainment. The model depicts this flow *(see Figure 1)*. The

Comparative Fit Index (CFI) was .96 and Tucker-Lewis Index (TLI) was .91. Both values suggest the model is a good fit. However, the Chi-Square value for the model was significant $X^2(6) = 29.84$, $p < .001$, the Root Mean Square Error Approximation (RMSEA) value was 0.11, and the Standardized Root Mean Square Residual (SRMR) was 0.09, dampening the strong CFI and TLI. In all, the model suggests a moderate fit and does support the validity of previous extracurricular participation and ACE exposure, affecting life outcomes in emerging adulthood through resilience.

Discussion

The current study provides novel insight into how adolescent extracurricular activity may promote prosocial development with lasting protective effects on behavior and educational outcomes throughout emerging adulthood. Consistent with study hypotheses, significant positive correlations between PEP and resilience, educational attainment, and current participation in adulthood were found. However, resilience did not significantly correlate with college GPA. In the PEP- resilience analysis, resilience served as an outcome variable which established a direct effect between the two. PEP's significant positive correlation with resilience is particularly significant as it further supports existing literature's claims that youth programming can foster prosocial development (Caldwell & Witt, 2011; Gestsdottir et al., 2010; Gestsdottir & Lerner, 2007).

Exploring drinking behaviors, the current study hypothesized that high resilience would correlate with less risky drinking behaviors. This hypothesis was informed by previous studies that showed correlation between resilience, effective coping skills, and less frequent alcohol usage (Antelo et al., 2021; Wills et al., 2001). It was expected that greater coping ability would

decrease the need for substance assisted emotional regulation and thus drive down heavy drinking behaviors. Resilience correlated significantly with less binge drinking episodes in the current dataset. However, there was not a significant correlation between resilience and drinking frequency which contrasts with previous research (Wills et al., 2001). This pattern suggests that those with higher resilience may be motivated to drink for social benefit as opposed to coping needs. These findings align with a previous study which revealed that among those who had recent trauma exposure, those with higher trait resilience drank significantly less in the aftermath (Cusack et al., 2023).

As hypothesized, ACEs significantly correlated with increased risky drinking and less frequent extracurricular participation. These findings agreed with previous studies that showed high ACE individuals suffering from increased substance use, substance use disorder, and multimorbidity at higher rates than those not exposed to ACEs (Felitti et al., 1998; Senaratne et al., 2024). This pattern of increased risk-taking behavior and substance use were specifically identified in adolescents (Silva et al., 2024). The current study depicts this identified population continuing their adolescent behavioral patterns into adulthood.

The resulting path analysis sought to validate patterns established through previous youth development research. The analysis did produce a moderate fit to the proposed model informed by Positive Youth Development theory *(see Figure 1).* Previously, high self-efficacy was found to positively correlate with other prosocial attitudes and behaviors after successfully navigating challenges (Bandura et al., 2003). Proponents of the Positive Youth Development Theory expanded this idea and suggested that intentional programming could assist kids in developing prosocial traits by providing them a safe environment to build skills through overcoming group challenges (Romer & Hansen, 2021). Longitudinal studies of kids participating in group

extracurricular activities did show children developing increased prosocial attitudes and successful development (Busseri et al., 2006; Forneris et al., 2015; Gestsdottir & Lerner, 2007). The current model sought to validate this premise by using resilience as a mediator of PEP, ACEs, and life outcomes. As a mediator, resilience could reflect pro-social development from PEP while also reflecting possible pro-social deficits from adversity exposure. Resilience was used as a proxy measure for self-efficacy given resilience has been found to be an advanced manifestation of self-efficacy and its protective effect for ACE-exposed populations (Hamill, 2003; Howell et al., 2021; Schaefer et al., 2018). The current study's CFI and TLI suggested a good fit while the RMSEA and SRMR values were mixed.

Generally, the CFI compares if data fits a proposed model better than a null model (Kline, 2011). The current study's .96 CFI suggests an excellent fit and implies meaningful relationships between variables. TLI is a similar fit index to CFI, but it also reflects the proposed model complexity (Kline, 2011). The current .91 TLI indicates a good fit suggesting the current paths explain the dataset to an acceptable degree. These findings hold significant weight as they support PYD's fundamental beliefs that activities can promote prosocial development and this involvement and prosocial trait development lead to better life outcomes (Lerner, 2004; Romer & Hansen, 2021).

The RMSEA estimates how well the model would fit the population when accounting for covariances (Kline, 2011). It is hypothesized this value was affected by its application to a particularly high achieving sample whereas the model was meant to reflect the general emerging adult population. Thus, these participants achieved favorable educational outcomes above the degree the model expected resulting in an increased error approximation (Silva et al., 2024). Moreover, the strength of the model may have been weakened by neglecting prosocial traits

besides resilience. Since SRMR reflects the average standardized difference between the observed and model-predicted outcomes, the slightly high (.09) value suggests that a contributing path may be missing (Kline, 2011). Similarly, the model's chi-square value was significant, which means the model has opportunity for enhancement. This supports the claim that resilience is only one part of the larger developmental process. Resilience is not the only prosocial trait linked to PYD and ACE buffering effects. The 5 C's are the leading model of PYD and are traits that have been shown to lessen ACE exposure effects. Connection has been shown to have a particularly strong buffering effect on anxiety, depression, and social disconnection in ACE-exposed samples (Crouch et al., 2019). Overall, the consensus of the various fit statistics suggests that the current model is a moderate fit. While there may be room for further expansion, the present fit endorses previous research claiming extracurricular activities facilitate prosocial development that has lasting behavioral effects and buffers consequences from ACE exposure (Lerner, 2004; Schaefer et al., 2018; Romer & Hansen, 2021).

Notably, the current study contributes to the scarce literature examining the long-term impact of extracurricular involvement. Gardner et al. (2008) performed the first life outcome study which found adolescent extracurricular participation did significantly correlate to educational attainment, career, and civic engagement. However, Gardner did not explore trait outcomes. Building upon Gardner et al. (2008), the current study's findings suggest that extracurricular involvement may indirectly encourage favorable life outcomes like higher educational attainment via directly developing resilience and prosocial traits that last into emerging adulthood.

Limitations

Data collection occurred through internet-assisted snowball sampling and a single free-recall format due to location and testing duration limits. This sampling method created a large sample which improved statistical strength, but it may have limited generalizability. Similarly, this method was effective in reaching a geographically diverse sample, but possible selection bias from recruitment within internet social networks created a sample with particularly high college GPAs. There also may have been self-selection bias where possible participants only responded if they were confident with their academic performance in emerging adulthood. Given the sample of high-achieving emerging adults, the collected data most likely had restricted ranges for educational outcomes. For example, other studies had more drastic negative academic impacts for ACE-exposed individuals, yet the current study did not show a significant correlation between ACEs and GPA (Mahoney & Cairns, 1997; Silva et al., 2024). Since this study collected college GPA, those who may have had larger academic impacts may have self-selected out of attending college and thus this impact is not reflected in current data. Where GPA calculations may fall short, collected educational attainment data provides insight into participants who may have self-selected out of higher education. Moreover, the single recall format may have impacted data accuracy, especially for young adults retrospectively reporting adolescent extracurricular participation. While the study assumes accurate recall, improper recollection could have affected subsequent data analysis. The sample was restricted to US emerging adults, and results should only be generalized to that population. Likewise, the current study did not account for socioeconomics which has the potential to influence extracurricular participation and education (Gardner et al., 2012). Previous data controlling for socioeconomic status have supported the

PYD framework, but status was not included in the current path analysis (Gardner et al., 2008; Martin et al., 2013).

Additionally, many correlations were found to be significant, but their strengths were not strong. Despite weak correlational strengths, these relationships were found to be naturally occurring across all extracurricular activities. Given the wide spectrum of accepted data and naturalistic approach, any significant effect provides meaningful theoretical support for these activities' potential.

Finally, the current study only collected data on resilience for prosocial traits. While literature links resilience to PYD and ACE exposure buffering, it is not the only prosocial trait to contribute to these outcomes (Hamill, 2003; Howell et al., 2021; Schaefer et al., 2018). The path analysis could have reached greater strength if a wider range of advantageous prosocial traits were included in the model.

Directions for Future Research

It is the recommendation of the researcher for further research to be performed analyzing the longevity of extracurricular participation's benefits into emerging adulthood and how these activities can be intentionally utilized in schools to promote long-term success.

The current study had a single data collection period for a retrospective, self-report study. Longitudinal study with multiple data collection points and more focused extracurricular inclusion parameters may result in more robust data. Data collection through tangible means such as employment and academic records is suggested to complement self-report data. Likewise, exploration of other life outcomes such as employment, finances, and belief systems and expansion into other prosocial attitudes or socioeconomic status may provide insightful

context. Elaboration on self-efficacy measures may also provide insight into the development of these attitudes and behaviors. Specifically possible prosocial development to buffer binge drinking behaviors may encourage more responsible social drinking.

Furthermore, experimental research into adding intentional prosocial interventions into the framework of pre-existing extracurriculars could provide a means of accessible and readily engaged with prosocial development within schools. Socioeconomics can restrict youths from participation and receiving developmental benefits (Gardner et al., 2012). Despite varying levels of resources, most schools do provide funding for athletics and arts programming. Providing psychoeducation and basic, easy to implement resiliency skills to these established coaches and directors could provide an avenue to reach students in schools that are typically underserved. This research would be a proactive approach to providing schools with non-clinical, prosocial development tools. These resiliency skills could be taught to improve performance in the extracurricular activity. As they are employed during the activity, they are then adopted into the youths' repertoire and can be called upon when needed to handle the stressors of daily life.

Preliminary versions of this concept are already being tested within high school athletics (Bryant, 2016). Through the 2010s into early 2020s, some youth sport coaches started to adopt and use "mental skills" for their athletes. This involved quick lessons during practices on sport psychology tools such as visualization, goal setting, and mindful breathing for gametime use. This movement gained momentum within coaching circles and some coaches began to develop their own curriculums (Bryant, 2016). This pursuit does hold promise as systematic review of short, tool-focused sports psychology interventions did find these lessons provided meaningful enhancement for high performing athletes (Reyes-Bossio et al., 2022).

Conclusion

In all, the current study aimed to examine the possible impact of extracurricular activity and resulting protective factors' longevity into emerging adulthood. Specifically, resilience was explored as a possible protective factor developed within these extracurriculars that could be employed during emerging adulthood to achieve greater educational outcomes and resist risky drinking behaviors. Adverse Childhood Experiences were also examined within this dynamic as their occurrence is common throughout the school population and has been historically recognized as significant risk factors. Previous research provides many examples of resilience development through extracurricular participation and correlation with academic and behavioral benefits. These benefits extended to those who were exposed to multiple Adverse Childhood Experiences. However, there is a current lack of research into the longevity of these benefits. The current study hopes to minimize this literature gap. The results suggest that extracurricular participation and resilience do significantly correlate. Moreover, resilience had significant positive correlations with educational attainment and safe drinking behaviors even after adolescent participation ceased. The data was meaningfully fit to a model via path analysis that suggests that resilience developed through extracurricular participation and impacted by ACEs has a significant positive effect on educational outcomes and risk-adverse behavior into emerging adulthood. The findings may be valuable in encouraging more meaningful participation and the possible implementation of intentional prosocial skill-building lessons within established extracurriculars to enhance positive youth development in an accessible manner.

References

Agans, J. P., Champine, R. B., DeSouza, L. M., Mueller, M. K., Johnson, S. K., & Lerner, R. M. (2014). Activity Involvement as an Ecological Asset: Profiles of Participation and Youth Outcomes. *Journal of Youth and Adolescence*, *43*(6), 919–932. https://doi.org/10.1007/s10964-014-0091-1

Almeida, L., Dias, T., Corte-Real, N., Menezes, I., & Fonseca, A. (2023). Positive youth development through sport and physical education: A systematic review of empirical research conducted with grade 5 to 12 children and youth. *Physical Education and Sport Pedagogy*, *0*(0), 1–27. https://doi.org/10.1080/17408989.2023.2230208

Antelo, E., Saldaña, O., & Carballeira, A. (2021). The impact of group psychological abuse on distress: The mediating role of social functioning and resilience. *European Journal of Psychotraumatology*, *12*, 1954776. https://doi.org/10.1080/20008198.2021.1954776

Arnett, J. (2014). *Emerging Adulthood: The Winding Road from the Late Teens Through the Twenties (2nd edition)*. https://doi.org/10.1093/acprof:oso/9780199929382.001.0001

Bethell, C. D., Newacheck, P., Hawes, E., & Halfon, N. (2014). Adverse childhood experiences: Assessing the impact on health and school engagement and the mitigating role of resilience. *Health Affairs (Project Hope)*, *33*(12), 2106–2115. https://doi.org/10.1377/hlthaff.2014.0914

Bering, H., & Schulz, W. (2024). Can sports and music level the playing field? Adolescents' extracurricular activities and the reproduction of social inequalities in cognitive skills. *Research in Social Stratification and Mobility*, *90*, 100895. https://doi.org/10.1016/j.rssm.2024.100895

Bowers, E. P., Li, Y., Kiely, M. K., Brittian, A., Lerner, J. V., & Lerner, R. M. (2010). The Five Cs Model of Positive Youth Development: A Longitudinal Analysis of Confirmatory Factor Structure and Measurement Invariance. *Journal of Youth and Adolescence*, *39*(7), 720–735. https://doi.org/10.1007/s10964-010-9530-9

Bush, K., Kivlahan, D. R., McDonell, M. B., Fihn, S. D., & Bradley, K. A. (1998). The AUDIT alcohol consumption questions (AUDIT-C): An effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. *Archives of Internal Medicine*, *158*(16), 1789–1795. https://doi.org/10.1001/archinte.158.16.1789

Busseri, M., Rose-Krasnor, L., Willoughby, T., & Chalmers, H. (2006). A Longitudinal Examination of Breadth and Intensity of Youth Activity Involvement and Successful Development. *Developmental Psychology*, *42*, 1313–1326. https://doi.org/10.1037/0012-1649.42.6.1313

Caldwell, L., & Witt, P. (2011). Leisure, recreation, and play from a developmental context. *New Directions for Youth Development*, *2011*, 13–27. https://doi.org/10.1002/yd.394

Campbell-Sills, L., Cohan, S. L., & Stein, M. B. (2006). Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour Research and Therapy*, *44*(4), 585–599. https://doi.org/10.1016/j.brat.2005.05.001

Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor-davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress*, *20*(6), 1019–1028. https://doi.org/10.1002/jts.20271

Carter, J. S., McNair, G., Bushnell, A., Saldana, L., & Grant, K. E. (2023). Sports Participation, Frequency, and Competence Differentially Impact Youth Depressive, Anxious, and

Somatic Symptoms: Gender, Neighborhood, and Sports Type Effects. *Mental Health and Physical Activity*, *25*. https://doi.org/10.1016/j.mhpa.2023.100562

Choi, E., Lee, O., Park, J.-J., & Lee, O. (2015). The influence of a sports mentoring program on children's life skills development. *Journal of Physical Education and Sport*, *15*(2), 2264–2271. https://doi.org/10.7752/jpes.2015.02040

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Crosnoe, R., Johnson, M. K., & ElderJr., G. H. (2004). Intergenerational Bonding in School: The Behavioral and Contextual Correlates of Student-Teacher Relationships. *Sociology of Education*, *77*(1), 60–81. https://doi.org/10.1177/003804070407700103

Crouch, E., Radcliff, E., Strompolis, M., & Srivastav, A. (2019). Safe, Stable, and Nurtured: Protective Factors against Poor Physical and Mental Health Outcomes Following Exposure to Adverse Childhood Experiences (ACEs). *Journal of Child & Adolescent Trauma*, *12*(2), 165–173. https://doi.org/10.1007/s40653-018-0217-9

Cusack, S. E., Bountress, K. E., Sheerin, C. M., Spit for Science Work Group, Dick, D. M., & Amstadter, A. B. (2023). The longitudinal buffering effects of resilience on alcohol use outcomes. *Psychological Trauma: Theory, Research, Practice, and Policy*, *15*(6), 1000–1011. https://doi.org/10.1037/tra0001156

DeMartini, K. S., & Carey, K. B. (2012). Optimizing the use of the AUDIT for alcohol screening in college students. *Psychological Assessment*, *24*(4), 954–963. https://doi.org/10.1037/a0028519

Dworkin, J. (2007). Adolescents' Negative Experiences in Organized Youth Activities. *Journal of Youth Development*, *1*(3), 44–62. https://doi.org/10.5195/jyd.2007.373

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *American Journal of Preventive Medicine*, *14*(4), 245–258. https://doi.org/10.1016/S0749-3797(98)00017-8

Felix, A. S., Lehman, A., Nolan, T. S., Sealy-Jefferson, S., Breathett, K., Hood, D. B., Addison, D., Anderson, C. M., Cené, C. W., Warren, B. J., Jackson, R., & Williams, K. P. (2019). Stress, resilience and cardiovascular disease risk among African-American women: Results from the Women's Health Initiative. *Circulation. Cardiovascular Quality and Outcomes*, *12*(4), e005284. https://doi.org/10.1161/CIRCOUTCOMES.118.005284

Fischer, N., Steiner, C., & Theis, D. (2020). How many, how long, how diverse? Measuring and analysing participation in extracurricular activities. In *International developments in research on extended education: Perspectives on extracurricular activities, after-school programmes, and all-day schools.* (pp. 87–113). Verlag Barbara Budrich.

Forneris, T., Camiré, M., & Williamson, R. (2015). Extracurricular Activity Participation and the Acquisition of Developmental Assets: Differences Between Involved and Noninvolved Canadian High School Students. *Applied Developmental Science*, *19*(1), 47–55. https://doi.org/10.1080/10888691.2014.980580

Gardner, M., Browning, C., & Brooks-Gunn, J. (2012). Can Organized Youth Activities Protect Against Internalizing Problems Among Adolescents Living in Violent Homes. *Journal of Research on Adolescence*, *22*(4), 662–677. https://doi.org/10.1111/J.1532-7795.2012.00811.X

Gardner, M., Roth, J., & Brooks-Gunn, J. (2008). Adolescents' participation in organized activities and developmental success 2 and 8 years after high school: Do sponsorship, duration, and intensity matter? *Developmental Psychology*, *44*(3), 814–830. https://doi.org/10.1037/0012-1649.44.3.814

Gestsdottir, S., Bowers, E., & von Eye, A. (2010). Intentional Self Regulation in Middle Adolescence: The Emerging Role of Loss-Based Selection in Positive Youth Development. *Journal of Youth and Adolescence*, *39*(7), 764–782. https://doi.org/10.1007/s10964-010-9537-2

Gestsdottir, S., & Lerner, R. M. (2007). Intentional self-regulation and positive youth development in early adolescence: Findings from the 4-h study of positive youth development. *Developmental Psychology*. https://www.academia.edu/52780386/Intentional_self_regulation_and_positive_youth_development_in_early_adolescence_Findings_from_the_4_h_study_of_positive_youth_development

Grover, H. M., Limber, S. P., & Boberiene, L. V. (2015). Does it matter if students experience school as a place of community? *American Journal of Orthopsychiatry*, *85*(6, Suppl), S79–S85. https://doi.org/10.1037/ort0000131

Haider, Z. F., & von Stumm, S. (2022). Predicting educational and social-emotional outcomes in emerging adulthood from intelligence, personality, and socioeconomic status. *Journal of Personality and Social Psychology*, *123*(6), 1386–1406. https://doi.org/10.1037/pspp0000421

Hamill, S. (2003). Resilience and Self-Efficacy: The importance of efficacy beliefs and coping mechanisms in resilient adolescents. *Colgate University Journal of the Sciences*, *35*.

Hittepole, C. (2016). Factors Related to High Risk Drinking and Subsequent Alcohol-Related Consequences Among College Students. *Undergraduate Honors Thesis Collection*. https://typeset.io/papers/factors-related-to-high-risk-drinking-and-subsequent-alcohol-2imuom3wo6

Hoff, K. A., Einarsdóttir, S., Chu, C., Briley, D. A., & Rounds, J. (2021). Personality Changes Predict Early Career Outcomes: Discovery and Replication in 12-Year Longitudinal Studies. *Psychological Science*, *32*(1), 64–79. https://doi.org/10.1177/0956797620957998

Hoffmann, M. D., Barnes, J. D., Tremblay, M. S., & Guerrero, M. D. (2022). Associations between organized sport participation and mental health difficulties: Data from over 11,000 US children and adolescents. *PLoS ONE*, *17*(6), e0268583. https://doi.org/10.1371/journal.pone.0268583

Howell, K. H., Miller-Graff, L. E., Martinez-Torteya, C., Napier, T. R., & Carney, J. R. (2021). Charting a Course towards Resilience Following Adverse Childhood Experiences: Addressing Intergenerational Trauma via Strengths-Based Intervention. *Children*, *8*(10), 844. https://doi.org/10.3390/children8100844

Jimenez, M. E., Wade, R., Lin, Y., Morrow, L. M., & Reichman, N. E. (2016). Adverse Experiences in Early Childhood and Kindergarten Outcomes. *Pediatrics*, *137*(2), e20151839. https://doi.org/10.1542/peds.2015-1839

Kline, R. B. (2011). *Principles and practice of structural equation modeling, 3rd ed* (pp. xvi, 427). Guilford Press.

Konaszewski, K., Kolemba, M., & Niesiobędzka, M. (2021). Resilience, sense of coherence and self-efficacy as predictors of stress coping style among university students. *Current Psychology*, *40*(8), 4052–4062. https://doi.org/10.1007/s12144-019-00363-1

Kort-Butler, L., & Martin, D. (2015). The Influence of High School Activity Portfolios on Risky Behaviors in Emerging Adulthood. *Justice Quarterly*, *32*(3), 381–409. https://doi.org/10.1080/07418825.2013.770547

Kuiper, H., van Leeuwen, C. C. M., Stolwijk-Swüste, J. M., & Post, M. W. M. (2019). Measuring resilience with the Connor-Davidson Resilience Scale (CD-RISC): Which version to choose? *Spinal Cord*, *57*(5), 360–366. https://doi.org/10.1038/s41393-019-0240-1

Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among America's youth* (pp. xxi, 203). Sage Publications, Inc.

Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology*, *33*(2), 241–253. https://doi.org/10.1037/0012-1649.33.2.241

Martin, A. J., Mansour, M., Anderson, M., Liem, G. A. D., & Sudmalis, D. (2013). The Role of Arts Participation in Students' Academic and Nonacademic Outcomes: A Longitudinal Study of School, Home, and Community Factors. *Journal of Educational Psychology*, *105*(3), 709–727. https://doi.org/10.1037/A0032795

Mayol-García, Y. (2022). *Girls Take Lessons, Join Clubs More Often Than Boys But Boys Play More Sports*. Census.Gov. https://www.census.gov/library/stories/2022/07/children-continue-to-be-involved-in-extracurricular-activities.html

Narayan, A. J., Lieberman, A. F., & Masten, A. S. (2021). Intergenerational transmission and prevention of adverse childhood experiences (ACEs). *Clinical Psychology Review*, *85*, 101997. https://doi.org/10.1016/j.cpr.2021.101997

Oláh, B., Fekete, Z., Kuritárné Szabó, I., & Kovács-Tóth, B. (2023). Validity and reliability of the 10-Item Adverse Childhood Experiences Questionnaire (ACE-10) among adolescents in the child welfare system. *Frontiers in Public Health*, *11*. https://doi.org/10.3389/fpubh.2023.1258798

Park, J. J., Zheng, J., & Kim, B. H. (2023). Unveiling the Inequalities of Extracurricular Activities in Admissions. *Change: The Magazine of Higher Learning*, *55*(5), 45–54. https://doi.org/10.1080/00091383.2023.2235253

Pérez-García, J. M., Suárez-Suárez, S., Doallo, S., & Cadaveira, F. (2022). Effects of binge drinking during adolescence and emerging adulthood on the brain: A systematic review of neuroimaging studies. *Neuroscience & Biobehavioral Reviews*, *137*, 104637. https://doi.org/10.1016/j.neubiorev.2022.104637

Qamar, S., & Akhter, M. (2020). Relationship between Students' Self-Efficacy and Resilience at Secondary School Level. *Bulletin of Education and Research*, *42*(3), 215–224.

Reinert, D. F., & Allen, J. P. (2007). The Alcohol Use Disorders Identification Test: An Update of Research Findings. *Alcoholism: Clinical and Experimental Research*, *31*(2), 185–199. https://doi.org/10.1111/j.1530-0277.2006.00295.x

Romer, D., & Hansen, D. (2021). *Positive Youth Development in Education* (pp. 75–108). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-64537-3_4

Schaefer, L., Howell, K., Schwartz, L., Bottomley, J., & Crossnine, C. (2018). A concurrent examination of protective factors associated with resilience and posttraumatic growth

following childhood victimization. *Child Abuse & Neglect*, *85*. https://doi.org/10.1016/j.chiabu.2018.08.019

Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2020). *Monitoring the Future National Survey Results on Drug Use, 1975-2019. Volume II, College Students & Adults Ages 19-60*. Institute for Social Research. https://eric.ed.gov/?id=ED608266

Senaratne, D. N. S., Thakkar, B., Smith, B. H., Hales, T. G., Marryat, L., & Colvin, L. A. (2024). The impact of adverse childhood experiences on multimorbidity: A systematic review and meta-analysis. *BMC Medicine*, *22*(1), 1–14. https://doi.org/10.1186/s12916-024-03505-w

Silva, C., Moreira, P., Moreira, D. S., Rafael, F., Rodrigues, A., Leite, Â., Lopes, S., & Moreira, D. (2024). Impact of Adverse Childhood Experiences in Young Adults and Adults: A Systematic Literature Review. *Pediatric Reports*, *16*(2), 461–481. https://doi.org/10.3390/pediatric16020040

Thouin, É., Dupéré, V., Dion, E., McCabe, J., Denault, A.-S., Archambault, I., Brière, F. N., Leventhal, T., & Crosnoe, R. (2022). School-based extracurricular activity involvement and high school dropout among at-risk students: Consistency matters. *Applied Developmental Science*, *26*(2), 303–316. https://doi.org/10.1080/10888691.2020.1796665

U.S. Census Bureau, D. C. (2023). Median age at first marriage: 1890 to present. *1890 to 1940, and Current Population Survey, Annual Social and Economic Supplements, 1947 to 2023*. census.gov

Wechsler, H., & Kuo, M. (2000). College Students Define Binge Drinking and Estimate Its Prevalence: Results of a National Survey. *Journal of American College Health*, *49*(2), 57–64. https://doi.org/10.1080/07448480009596285

Wechsler, H., & Nelson, T. (2008). *What We Have Learned From the Harvard School of Public Health College Alcohol Study: Focusing Attention on College Student Alcohol Consumption and the Environmental Conditions That Promote It*. https://www.academia.edu/15875009/What_We_Have_Learned_From_the_Harvard_School_of_Public_Health_College_Alcohol_Study_Focusing_Attention_on_College_Student_Alcohol_Consumption_and_the_Environmental_Conditions_That_Promote_It

Weitzman, E., & Chen, Y. (2005). Risk modifying effect of social capital on measures of heavy alcohol consumption, alcohol abuse, harms, and secondhand effects: National survey findings. *Journal of Epidemiology and Community Health*, *59*(4), 303–309. https://doi.org/10.1136/jech.2004.024711

White-Gosselin, C., Poulin, F., & Denault, A. (2024). Social integration in the activity peer group in sport and non-sport organized activities: Links with depressive symptoms in adolescence. *Social Development*, *33*(2), 1–17. https://doi.org/10.1111/sode.12727

Wills, T. A., Sandy, J. M., Yaeger, A., & Shinar, O. (2001). Family risk factors and adolescent substance use: Moderation effects for temperament dimensions. *Developmental Psychology*, *37*(3), 283–297. https://doi.org/10.1037/0012-1649.37.3.283