

Relationship Between Adverse Childhood Experiences and Overall Health

Among College Students

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Abstract

The relationship between adverse childhood experiences (ACEs), mental health, physical health, and alcohol/drug use has been reported. However, the existing literature lacks much information on the relationship of these variables among college students, who are in a unique transition period of early adulthood. In this study, participants reported on their experience of ACEs, drug/alcohol use, and overall health (a combined mental and physical health measure). Analysis of the data revealed several interesting correlational findings. Females reported higher levels of ACEs than males. A marginally reliable positive correlation was found between overall health and general health and ACEs. Interestingly, no correlation was found between ACEs and alcohol or tobacco use in this study. Possible explanations and the implications of these findings are discussed herein.

Over 35 million children (47.9%) in the United States have faced one or more adverse childhood experience (ACE) (CDC, 2011). An adverse childhood experience is any traumatic or troubling experience occurring before 18 years of age that a person remembers as an adult including, but not limited to, physical and sexual abuse, physical and emotional neglect, parental divorce, and parental substance abuse (Springer, Sheridan, Kuo, & Carnes, 2007). ACEs have been linked to poor physical and mental health outcomes in adulthood. A study by Felitti and colleagues (1998) reported a correlation between more than four ACEs and a four-fold to twelve-fold increase of risk for overall health problems—which includes both physical and mental health—in adulthood compared with those who experience fewer ACEs.

A survey study conducted by Springer and colleagues (2007) revealed that increased ACE incidence was correlated with a graded increase in mental health issues including depression, anger, and anxiety. A similar study by Karatekin (2017) reported that increased incidence of ACEs predicted worse mental health over time defined by increased stress, anxiety, depression, and suicidal ideation in college students. Both of these studies and others reveal a negative relationship between ACEs and mental health.

A study by Chartier, Walker, and Naimark (2010) found that ACEs were associated with poor adult health outcomes. Moreover, the odds for reporting multiple physical health problems increased with each additional incidence of ACE. A similar study on college students revealed that ACE exposure is a significant predictor of lowered physical health and increased health problems (Khrapatina & Berman, 2017). The increased risk of health issues related to ACEs can be exacerbated by the finding that students with increased ACE incidence are also at a higher risk for alcohol and drug use (Forster, Grigsby, Rogers, & Benjamin, 2018). In the already stressful college environment, knowing the nature of the relationship between ACE and overall

health as well as the risk factors is important in equipping college students with the necessary tools and help to cope with possible adverse effects.

While there are still gaps in the research on how ACEs affect overall health, there exists even less research on college students. This study aims to help fill in some of that gap and expand the knowledge on ACEs and how it relates to overall health in college students. Moreover, many ACE studies focus on only physical or only mental aspects of health. Herein, the aim is to combine these measures for an overall examination of the relationship between ACE and health. We hypothesize that ACEs and overall health will be negatively correlated, whereas ACEs and the use of alcohol and tobacco will be positively correlated among college students.

Methods

Participants

Twenty-five undergraduate students (14 females and 11 males; average age=22, $SD=7.08$) were recruited from Angelo State University. The sample consists of 44% Caucasians, 4% Black/African Americans, 36% Latino/a or Hispanics, 12% Asian/Asian Americans, and 4% Native Americans. Participants in this study volunteered for class extra credit or to fulfill a class requirement.

Measures

Descriptive Data. A demographics questionnaire was administered to participants. Questions included information about the participant's gender, ethnicity, college year, age, GPA, major, level of involvement on the college campus, and alcohol/tobacco use.

ACE. A modified 1-item ACE questionnaire was administered to participants.

Participants were asked to rank whether they believe they had an adverse childhood on a 5-point Likert scale (1=strongly disagree, 5=strongly agree).

Overall Health. The modified 33-item Health Survey Instrument developed at RAND as part of the Medical Outcomes Study was administered to the participants (Hays, 1994).

Questions 5, 8, and 12 were removed from the survey as they pertained to a much older population than the targeted college population in this study. This questionnaire assessed mental and physical health. A sample item includes, “In general, would you say your health is: 1-Excellent, 2-Very Good, 3-Good, 4-Fair, 5-Poor” (Hays, 1994).

Procedure

Participants were instructed by the experimenters to sign in and take a seat at an empty desk. The experimenters explained that the premise of the study was to investigate the relationship between adverse childhood experiences and overall health. Informed consent forms were administered. Participants were then asked to complete the demographics, ACE, and overall health questionnaires. After completing the forms, participants were fully debriefed and thanked for their participation.

Results

A bivariate correlation was conducted between the eight measures of health (general health, pain, limits on physical health, limits on emotional problems, fatigue, emotional well-being, social functioning, and physical functioning) from the RAND survey, overall health (the average of the eight RAND health measures), the ACE measure, and the demographics of the participants. Neither alcohol use ($M=1.16$, $SD=1.11$) nor tobacco use ($M=0.24$, $SD=0.52$) were significantly correlated with ACE ($M=3.44$, $SD=1.23$), $p>0.05$. ACE ($M=3.44$, $SD=1.23$) was

significantly negatively correlated with gender ($M=1.44$, $SD=0.51$), $r=-0.0458$, $p<0.05$. Females reported significantly higher incidences of ACE than males. There was a marginally significant positive correlation between general health ($M=69.80$, $SD=17.29$) and ACE ($M=3.44$, $SD=1.23$), $r=0.348$, $p<0.1$. Overall health ($M=53.69$, $SD=5.91$) and ACE ($M=3.44$, $SD=1.23$) were also marginally significantly correlated, $r=0.348$, $p<0.1$. Those who reported higher levels of ACE also reported higher levels of general health and higher levels of overall health.

Discussion

The present study investigated the relationship between ACEs and overall health in college students. We hypothesized that ACEs and overall health would be negatively correlated, whereas ACEs and the use of alcohol and drugs would be positively correlated among college students. One significant and two marginally significant correlations were revealed.

A significant correlation was revealed for ACEs and gender. Males reported lower incidence of ACEs than females did. Research indicates that men tend to internalize things more, perhaps resulting in being less willing to admit to having experienced ACEs (Roberts, 2018). In contrast, females reported higher incidence of ACEs than males. According to a study by Roberts (2018), females are more often subjected to abuse. Since females experience abuse more often, they are more likely to report higher levels of abuse or ACEs. This finding may further be due to women's traditional gender roles. Women may be more vulnerable to ACEs due to society often negatively objectifying them. Females are also more likely to experience behavioral and emotional problems from reported abuse (Roberts, 2018).

No correlation was found between ACEs and alcohol or tobacco use in this study, which does not support the hypothesis. This finding is surprising, considering other studies have found a positive correlation between alcohol and tobacco use and ACE (Forster et al., 2018; Mersky,

Topitzes, & Reynolds, 2013). A study conducted by Windle and colleagues (2018) on a sample of almost 3,000 college students found that increased levels of ACEs were correlated with higher levels of cigarette use, alcohol use, and marijuana use. Our sample size of 25 students may simply be too limited to detect any significant correlation between the variables.

Further analysis of the data suggested that overall health (and general health) increased with increasing levels of ACEs, which is completely opposite the hypothesis of a negative correlation between these variables. This finding directly conflicts with what has previously been reported. ACEs have been correlated with lower levels of health in previous studies (Springer et al., 2007; Khrapatina & Berman, 2017). A possible explanation for this discrepancy exists in the stage of life of the sample obtained for this study. ACEs have been associated with poor health outcomes in early adulthood, which includes the late teens to thirty years of age (Windle et al., 2018). The average age of our sample size was 22, which is on the lower end of early adulthood. The representative sample herein may still be too young to see the effects of ACEs on their health, as deterioration in overall health increases with age (Chartier et al., 2010). Furthermore, Roberts (2018) reported that those in lower socioeconomic status are more likely to experience ACEs. Those who may have experienced higher levels of ACEs may be excluded from our sample as they may not have access to college if they are from a lower socioeconomic status.

Limitations

There were several limitations to this study. The most influential limitation was the small sample size. With a larger sample size, more significant relationships may have been revealed. One reason for the small sample size was the limited time that the study was conducted. While this study did provide some interesting insight into the relationship between ACEs, overall health, and alcohol/tobacco use, the study only investigated correlations, which leaves us unable

to conclude on causations of the relationships reported herein. Another limitation of our study was the 1-item ACE questionnaire. Use of a more detailed measure could have revealed more evidence that may have aligned with the existing research. Further limitations included unequal male and female representations, a complete reliance on the responses of the participants, and a lack of information on young adults who are not enrolled in college.

Concluding Remarks

Results of this study revealed the interesting and unexpected relationship between gender and ACEs. While our hypotheses were not supported, this study serves to demonstrate findings in a strictly college student sample that is not representative of the entire young adult population. It is clear from the available research that ACEs carry forward in the lifespan to influence a range of unhealthy outcomes that may develop in young adults. More research is necessary to develop college and young adult intervention programs to benefit individuals who have experienced ACEs and enable them to recognize and cope with potential negative health outcomes. Moreover, developing programs and policies that work to prevent ACEs and ameliorate their potential impacts is of utmost importance given the relationship between ACEs and health outcomes.

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