

# Exploring the Influence of Internal and Environmental Protective Factors on Adolescent Alcohol and Drug Use

## Abstract

**Background:** Adolescent use of tobacco, alcohol, and illicit drugs are associated with global rates of increased morbidity and mortality. Negative outcomes of substance use include a higher probability of aggressive behavior, delinquency, chronic substance abuse disorders in adulthood, compromised mental health, and damaged interpersonal relationships. This study explores resilience-promoting characteristics (environmental and internal protective factors) that may mitigate alcohol and other drug (AOD) use in adolescents. While internal traits may play a role in resilience, social ecological theory posits that resilience develops within social ecologies, and that positive outcomes are reflective of environments that help facilitate positive growth.

**Methods:** Data from the 2013 California Healthy Kids Survey (CHKS) were used for this analysis; a sample of 7<sup>th</sup>, 9<sup>th</sup>, and 11<sup>th</sup> grade students (n = 36,517) was drawn from schools across the state of California. All questions were student self-report. AOD was measured with 2 items assessing the presence of AOD use within the past six months. Resilience-promoting characteristics were measured with 9 items including: if adolescents had an adult in the home who believed they would be a success, who wanted them to do their best, and listened; if adolescents knew where to go with a problem, tried to solve problems by talking/writing, and understood their moods/feelings. A series of Chi-square tests were conducted to establish the association between the independent and dependent categorical variables, followed by a logistic regression analysis to identify the effect of environmental and internal protective factors on (AOD) use in adolescents.

**Results:** Students who scored higher on the following protective factors indicated they were less likely to engage in AOD use. Adolescents who had an adult in their home who talked to them about their problems (OR = .886,  $p < .001$ ) indicated an 11.4% decreased odds of using AOD. Adolescents who had an adult in their home who wanted them to do their best (OR = .886,  $p < .001$ ) indicated an 11.4% decreased odds of using AOD. Adolescents who reported trying to work out their problems by writing/talking about them (OR = .930,  $p < .001$ ); ) indicated a 7% decreased odds of using AOD. Adolescents who reported being able to understand their moods and feelings (OR = .873,  $p < .001$ ) indicated an 12.7% decreased odds of using AOD.

**Conclusion:** The purpose of this study was to explore resilience-promoting characteristics within a social ecological framework. Results support the research hypothesis that adolescents who employ coping skills and have a supportive adult in their home are less likely to engage in AOD use. Consistent with social ecological theory, the environmental protective factors in this study consistently provided a stronger buffer against alcohol and other drug use in adolescents than the internal protective factors. Furthermore, given that the environment strongly impacts early biological development, it may be misleading to measure internal traits with the assumption that they are not influenced, or largely a byproduct of environmental variables. Implications for practice include a renewed focus on assessing environmental supports and work to develop these influences.

## Introduction

### Significance of Study

- In the United States and internationally, adolescent use of tobacco, alcohol, and illicit drugs are prevalent and associated with global rates of increased morbidity and mortality
- Negative outcomes of substance use include a higher probability of aggressive behavior, delinquency, risky sexual behavior, chronic substance abuse disorders in adulthood, compromised mental health, and damaged interpersonal relationship (Hill & Mrug, 2015; Hodder et al., 2013; Jung et al., 2018; Merikangas & McClair, 2012)
- In the United States alone, tobacco, alcohol, and substance abuse costs more than \$740 billion annually due to lost wages and productivity in the workplace, healthcare costs, drug rehabilitation treatment, and crime (NCDAS, 2020; NIH, 2019)
- Since 2000, the United States has recorded over 700,000 drug overdose deaths; despite the fact that a 4.1% decrease from 2017 was observed, 67,367 drug overdose deaths were recorded in 2018 (NCDAS, 2020)

### Purpose of Research

- The purpose of this study was to explore internal and external resilience-promoting characteristics in adolescents within a social ecological framework

### Research Question

- What is the effect of self-awareness and social protective factors on alcohol and drug use in adolescents?

### Research Hypothesis

- The hypothesis for this study asserts that adolescents who have protective social factors in the home, self-awareness, and positive copings skills will not engage in alcohol or drug use.

## Literature Review

### Conceptual Framework: Social Ecological

- The social ecological model is based on the premise that environmental variables are stronger determinants of behavioral outcomes than the unique biological traits of an individual (Ungar, 2011; Vygotsky, 1978)

### Variations of Resilience

- Research indicates that the processes that enhanced well-being were dependent upon individual, community, and contextual factors. Cultural pluralism provides a broader perspective of how adolescents and adults can navigate risk and creatively seek alternate solutions
- Marginalized populations who are in need of environmental modifications are unlikely to have the ability to advocate for resources and services from the dominate or elite culture (Ungar, 2011)
- Although the Hispanic adolescent population in the U.S. is rapidly increasing, the risk factors contributing to alcohol and drug use that contribute to increased morbidity and mortality have not received adequate attention in the research literature
- Studying the interaction of risk and protective factors in a social ecological context and examining how adolescents are affected differently may provide insight into more productive treatment modalities (Hill & Mrug, 2015; Sonuga-Barke, 2018; Ungar, 2018)

## Methods

### Research Design and Collection Procedures

CHKS is an anonymous epidemiological assessment tool that was created for students in fifth grade and above (ages 10+). The CHKS targets the five domains deemed most important to school and student improvement. The five domains are as follows: student connectedness, motivation and attendance; school culture and conditions; school safety; mental and physical well-being; and student support and resilience-promoting factors. Supplementary assessment tools cover additional areas in detail such as substance use and other high-risk behaviors (CalSCHLS, 2020; WestEd., 2014). CHKS were administered by school personnel onsite at randomly selected middle and high schools; school personnel were required to follow detailed instructions outlined by the California Department of Education (Austin et al., 2014) .

### Sample and Sampling Method

CHKS was administered to California students in grades 7, 9, 11, as well as students in continuation schools. The statewide sample contained 109 secondary schools that were randomly selected resulting in data collected from 688,713 students between fall 2011 and spring 2013 (Austin et al., 2014; WestEd., 2014).

### Measures

The original CHKS collected between 2011 and 2013 was a comprehensive group of health risk and resilience surveys that were administered to students including a core, mini-core, school climate, alcohol and other drugs, and social emotional health questions. The survey contained resilience and youth development modules (RYDM) with the potential to predict developmental, behavioral, and academic outcomes based on a student's internal and external resilience factors (Constantine et al., 1999).

**Environmental Assets** The first protective factor was measured utilizing five survey questions that assess environmental factors in the home: 1. (R-26) There is a parent or adult in my home who is interested in my schoolwork? 2. (R-27) There is a parent or adult in my home who believes that I will be a success? 3. (R-28) There is a parent or adult in my home that talks to me about my problems? 4. (R-29) There is a parent or adult in my home who always wants me to do my best? 5. (R-30) There is a parent or adult in my home who listens to me when I have something to say? The survey questions were quantified using a 4-point Likert scale: 1 = not true at all; 2 = a little true; 3 = pretty much true; and 4 = very much true

### Internal Assets

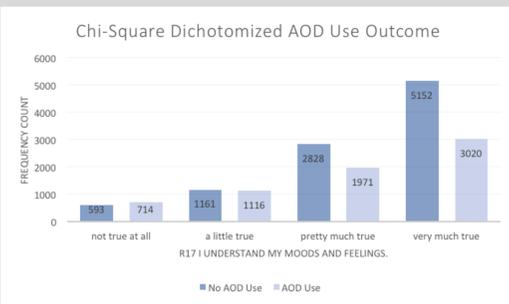
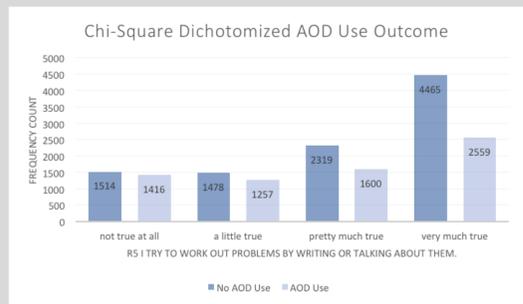
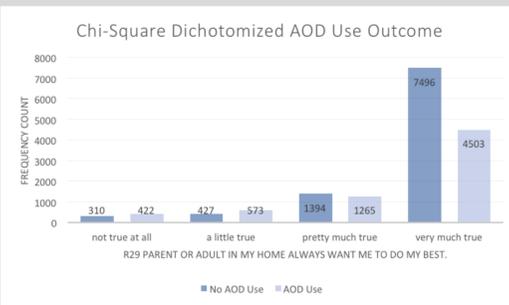
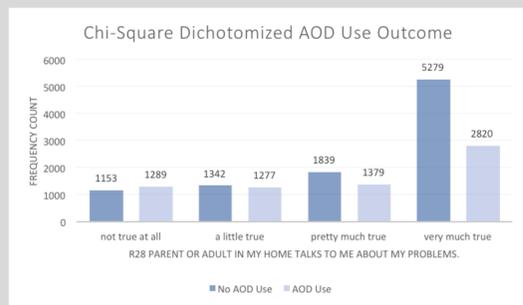
The second protective factor was measured utilizing two survey questions to assess internal coping skills: 1. (R-4) I know where to go with a problem? 2. (R-5) I try to work out problems by talking or writing about them? The third protective factor was measured utilizing two survey questions to assess the internal protective factor of self-awareness: 1. (R-17) I understand my moods and feelings? 2. (R-18) I understand why I do what I do? The survey questions were quantified using a 4-point Likert scale: 1 = not true at all; 2 = a little true; 3 = pretty much true; and 4 = very much true

### Dependent Variables

The dependent variables in this study were defined as alcohol and/or other drugs used within the past six months and were measured utilizing six survey questions: 1. (C-1) Used alcohol in the past six months? 2. (C-2) Used Marijuana in the past six months? 3. (C-3) Used inhalants in the past six months? 4. (C-4) Used cocaine, meth, or other stimulants in the past six months? 5. (C-5) Used LSD or psychedelics in the past six months? 6. (C-6) Used ecstasy in the past six months? (WestEd., 2014). The survey questions were recoded to create a dichotomous variable: 0 = no drug use; 1 = alcohol and other drug use.

## Results

A series of Chi-square tests were conducted to establish the association between the independent and dependent categorical variables, followed by a logistic regression analysis to identify the effect of environmental and internal protective factors on (AOD) use in adolescents. Students who scored higher on the following protective factors indicated they were less likely to engage in AOD use. Adolescents who had an adult in their home who talked to them about their problems (OR = .886,  $p < .001$ ) indicated an 11.4% decreased odds of using AOD. Adolescents who had an adult in their home who wanted them to do their best (OR = .886,  $p < .001$ ) indicated an 11.4% decreased odds of using AOD. Adolescents who reported trying to work out their problems by writing/talking about them (OR = .930,  $p < .001$ ); ) indicated a 7% decreased odds of using AOD. Adolescents who reported being able to understand their moods and feelings (OR = .873,  $p < .001$ ) indicated an 12.7% decreased odds of using AOD. Significant results are displayed in graphs below.



## Discussion

### Summary of Findings

#### Chi Square:

- All nine measures of self-reported environmental and internal protective factors against alcohol and other drug use in adolescents yielded significant results
- Results support the research hypothesis that adolescents who have internal coping skills and a supportive adult or parent in their home environment are less likely to engage in alcohol and other drug use

#### Logistic Regression:

- Adolescents who reported having a parent or adult in their home who talked to them about their problems and adolescents who reported having a parent or adult in their home who wanted them to do their best had an 11.4% decreased odds of using alcohol or other drugs
- Adolescents who reported being able to understand their moods and feelings indicated an 12.7% decreased odds of using alcohol and other drugs
- Adolescents who reported trying to work out their problems by writing or talking about them indicated a 7% decreased odds of using alcohol and other drugs

#### Practice and Policy Implications

- Clinicians and school personnel will be able identify adolescents who are at risk for alcohol and drug use and provide preventative services and/or interventions to minimize risk
- Evaluative screening measures, along with evidence-based treatment interventions will be readily available to adolescents thereby enhancing quality of life, reducing healthcare costs, and collateral damage to families, and society

#### Strengths and Limitations

- CHKS dataset is one of the most analyzed sources of information on adolescents in the U.S. due to the volume, content, and psychometric quality
- CHKS can be utilized to provide prevention, education, screening measures, and evidence-based treatment interventions for schools and the community to reduce risk factors for alcohol and drug use and improve behavioral outcomes
- The CHKS data being analyzed in this study is now 10 years old and may not accurately represent current trends in adolescent alcohol and drug use
- CHKS data for this analysis represents adolescents in Southern California exclusively, thus it does not reflect national trends

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