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Running Head: TRAUMA, RESILIENCE, ALCOHOL USE

Trauma, Resilience, and Alcohol Use among College Students

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Undergraduate Honors Thesis

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ABSTRACT

Previous research has found that as many as 66% of college students experience potentially traumatic events (PTEs) prior to entering or while attending their respective university (Bonnano, 2004; Read, Ouimette, White, Colder & Farrow, 2011). After experiencing a PTE, many students often begin drinking alcohol problematically (Berenz, Cho, Overstreet, Kendler, Amstadter, & Dick, 2016). This study sought to investigate how adaptive coping strategies and resiliency mediate the relationship between experiencing a PTE and drinking alcohol. Participants completed a three part online study. First, participants completed several measures including the Alcohol Use Disorders Identification Test, the Brief COPE Inventory, the Life Events Checklist for DSM-5, the Brief Resilience Scale, and a demographic questionnaire. Upon completion of the self-report measure participants were then assigned to the control or experimental condition. In the control condition participants watched a video about planetary science, while participants in the experimental condition watched a video about adaptive coping strategies. A selection of the Brief COPE Inventory subscales (subscales were relevant to the adaptive coping strategies video content) were given to both conditions after the videos were over to assess for potential changes in perceived coping skills. A mediation analysis found that students who had more negative coping strategies such as substance use and behavioral disengagement were more likely to drink problematically (substance use: $b=.8157, p<.001$; behavioral disengagement: $b=.7366, p<.05$). A linear regression found that the number of traumatic events a person experienced firsthand did not predict problematic drinking ($B=.011, p>.05, R^2=.000$). Given these findings, it may be advantageous to teach adaptive coping skills to students who drink alcohol

problematically, as they may be drinking as a negative means of coping. Teaching students adaptive coping skills may help prevent problematic alcohol use in the college student population.

INTRODUCTION

Many college students experience potentially traumatic events (PTEs) prior to entering or while attending their respective university with estimates as high as 66% (Bonnano, 2004; Read, Ouimette, White, Colder & Farrow, 2011). According to Galatzer-Levy, Burton, and Bonanno (2012), college students may be especially susceptible to PTEs such as sexual trauma and community violence. Many students who have experienced a PTE often begin drinking alcohol problematically (Berenz, Cho, Overstreet, Kendler, Amstadter, & Dick, 2016). The National Institute on Alcohol Abuse and Alcoholism estimates that 4 out of 5 college students drink alcohol, with about half of those students engaging in binge drinking behaviors. Instead of using alcohol to cope with past trauma, alternative adaptive coping strategies and an exhibition of resilience may give college students better means of coping (Green, Youssef, & Elbogen, 2014). Additional research is needed to identify more effective coping strategies among this population.

Potentially Traumatic Events and Posttraumatic Stress Disorder

Previous research has estimated that of the 50-60% of students who are exposed to PTEs, approximately 5-10% go on to develop Posttraumatic Stress Disorder (Bonanno, 2004; Read et al., 2011). In a study conducted by Read et al. (2011), it was found that 66% of college students had been exposed to a PTE and 9% had developed PTSD as a result of exposure to a PTE. The DSM-5 (American Psychiatric Association [APA], 2013), states that PTSD can occur after directly experiencing or witnessing exposure to death, sexual violence, or serious injury. PTSD can also occur upon learning that a traumatic event happened to a close family member or friend, or after experiencing

repeated exposures to traumatic situations as suffered by individuals such as police officers and first responders (APA, 2013). The likelihood of developing PTSD increases when an individual is exposed to repeated traumas (McCanlies, Mnatsakanova, Andrew, Burchfiel & Violanti, 2014). Symptoms of PTSD include the presence of one or more of the following items occurring after a traumatic event: recurrent, intrusive memories of the event; recurrent, distressing dreams about the event, flashbacks from the event or other dissociative reactions, intense psychological distress caused by cues that resemble the event, and physiological reactions to these cues (APA, 2013). Individuals who have been exposed to trauma may also avoid situations or stimuli (both internal and external) associated with the traumatic situation (APA, 2013). Negative cognitions associated with PTSD include an inability to remember details about the event, persistent negative thoughts about oneself and others, placing blame for the traumatic event on oneself or others, experiencing horror, anger, shame, and detachment from others, and feeling unable to experience positive emotions such as happiness or satisfaction (APA, 2013). In addition to the emotional symptoms, PTSD can cause physiological disturbances and individuals with PTSD may become more easily startled and hypervigilant, in addition to being self-destructive and having trouble sleeping (APA, 2013).

PTEs differ from PTSD in that not every PTE is actually traumatic (Lalande & Bonanno, 2011). Whether a PTE becomes a traumatic event or not depends on factors such as the intensity and duration of the event and personality variations (Lalande & Bonnano, 2011). Lalande and Bonnano (2011) also attribute the gap between PTEs and actual traumas to memory loss and forgetting aspects of traumatic situations. While PTEs are typically more vivid and well-remembered than mundane, everyday activities,

they are still prone to normal forgetfulness (Lalande & Bonnano, 2011). PTEs can include experiences such as natural disasters, transportation incidents, physical/sexual assault, and other uncomfortable sexual experiences (Gray, Litz, Hsu & Lombardo, 2004), but can also be defined more broadly as “violent encounters with nature, technology, or humankind” (Norris, 1992). PTEs usually cause psychological stress and provoke traumatic stress reactions, such as feelings of dread, horror, vulnerability, and loss of control (Gray et al., 2004). PTEs can lead to PTSD, and do so about 10% of the time (Bonnano, 2004). In addition to leading to PTSD, PTEs can also trigger other psychological disorders, such as substance use disorders and major depressive disorder (Gray et al., 2004). These disorders may occur either instead of PTSD, or in addition to PTSD (Gray et al., 2004).

PTEs and Alcohol Use

Experiencing a PTE can lead to increased drinking behaviors since alcohol can be used as a coping mechanism (Berenz et al., 2016). Berenz et al. (2016) conducted a longitudinal study and found a significant increase in drinking rates following a PTE in college students. Berenz et al. (2016) found that following an interpersonal PTE (physical or sexual abuse/assault), females tended to show a significant increase in drinking initially following a PTE, which continued over the course of the study. Additionally, an initial increase in alcohol use for college-aged males who experienced an interpersonal trauma was also observed (Berenz et al., 2016). Alternatively, Green et al. (2014) found that college aged males who measured low on resiliency (measured with the Connor-Davidson Resilience Scale) and also self-reported a high propensity towards alcohol abuse (measured with the AUDIT) were more likely to be misusing alcohol one year later

than their counterparts. It is further noted that demographic differences play a role in the development of alcohol abuse; young, white, male adults tend to be more at risk for abusing alcohol (Green et al., 2014).

Alcohol Use and College Students

In order for an individual to meet diagnostic criteria for Alcohol Use Disorder at least two of the following symptoms must be present: alcohol is consumed in large amounts or over a longer period of time than initially intended, the individual persistently desires to drink less alcohol, the individual spends a substantial amount of time obtaining and using alcohol as well as recovering from alcohol intoxication, the individual craves alcohol, drinking alcohol interferes with the individual's life and roles at work/school and at home, the individual continues drinking alcohol even though their drinking repeatedly causes problems for them, important activities are given up in order to consume more alcohol, alcohol is consumed in physically hazardous situations, the individual has become tolerant to alcohol (needs more and more alcohol to achieve intoxication; becomes less effected by the same amount of alcohol they have consumed in the past), and the individual experiences withdrawal (APA, 2013). Symptoms of withdrawal include hyperactivity, tremors, anxiety, insomnia, and seizures, among others (APA, 2013).

Motivations to consume alcohol can be driven by individuals having poor adaptive coping skills, leading them to turn to alcohol as a means of coping after experiencing a PTE, peer pressure, and ideas that alcohol increases pleasure (Berenz et al., 2016; Cadigan, Martens, & Herman, 2015). Using alcohol as a coping mechanism differs from traditional binge drinking in that binge drinking is having 5 or more drinks

for men and 4 or more drinks for women on a single occasion (Substance Abuse and Mental Health Services Administration [SAMHSA], 2016). Compared to binge drinking, alcohol can be used for coping in any quantity and only becomes problematic when it starts to interfere with the drinker's life (SAMHSA, 2016). Research has found that college students who both view alcohol as positively enforcing ("I will have more fun at the party if I drink!"), and use alcohol to cope with adverse situations drink the most out of their peers (Cadigan, Martens, & Herman, 2015). These students are likely to violate campus alcohol use policies (Cadigan et al., 2015). Alcohol use disorders within college populations are especially problematic because the cravings for alcohol often hinder the students from doing schoolwork and holding other responsibilities (APA, 2013). College students' school performance may suffer from the aftereffects of alcohol, or students may actually be getting intoxicated during school (APA, 2013). Young adults (ages 18-29) have the highest rate of alcohol use disorders, at 16.2% (APA, 2013). In a study regarding the drinking behaviors of college students, Rinker and Neighbors (2015) found that 91.9% of the students interviewed drank more than they intended to, 54.6% reported needing more alcohol to get the same effects over time, and 48.7% reported experiencing diminished intoxicative effects when drinking the same amount of alcohol over time. Of the students surveyed, 63.7% met criteria for a mild alcohol use disorder, 24.4% met for a moderate alcohol use disorder, and 11.9% met for a severe alcohol use disorder (Rinker and Neighbors, 2015).

Read et al. (2011) notes that the relationships among trauma, alcohol, and coping (as mentioned above) may be unique to college students and inapplicable to individuals at other stages of life, especially those with less life stress. Furthermore, it is important to

study psychological phenomena in the college population because more than a third of U.S. adults between the ages of 18 and 24 attend college and it important to understand how exposure to trauma and alcohol use can affect academic performance (Read et al., 2011).

Resiliency and Alcohol Use

Resilience is the ability to maintain equilibrium despite having experienced an adverse event, such as a PTE (Bonnano, 2004). Johnson, Dinsmore, & Hof (2011) identify four main patterns of resilience: dispositional, relational, situational, and philosophical, alongside ten individual characteristics of resilience: optimism, altruism, having a moral compass, faith or spirituality, humor, having a positive role model, social supports, leaving one's comfort zone, feeling that one has a mission in life, and being open to challenges. The coping mechanism scale used in the present study, the Brief-COPE, measures many of these items, such as optimism, faith or spirituality, humor, having a positive role model, and social support (see Appendix B), and the resilience scale used in this study (The BRS) measures how well students make it through hard times (see Appendix D). There has been an inverse relationship found between high resiliency (measured internally by the Connor-Davidson Resilience Scale and externally by involvement in religion, alcohol and tobacco use, and depression symptoms) and substance use, meaning that people with high levels of resiliency tend to consume less alcohol and vice versa (Goldstein, Faulkner, & Wekerle, 2013). It is important to assess overall resiliency levels as part of the alcohol screening process, since the two are related (Green et al., 2014). Additional research concurs, finding that resiliency scores and the number of drinks an individual consumes per day are inversely correlated (McCanlies et

al., 2014). It has also been concluded that high levels of resilience can be protective against alcohol use over time (Green et al., 2014). This is important because if individuals are given skills to increase their resiliency, they will be less likely to turn to alcohol (Green et al., 2014).

Previous research has found that resilience can be a compensatory and protective device against depressive symptoms following a trauma such as sexual assault as well as alcohol abuse (Goldstein et al., 2013). Similarly, it has been established that individuals with higher levels of resilience reported fewer PTSD symptoms (McCanlies et al., 2014). The findings of these studies indicate that resilience may be used to protect against depression, substance use, and possibly other maladaptive behaviors after experiencing a PTE (Goldstein et al., 2013; McCanlies et al., 2014). Thus, according to these findings, clinicians should measure resiliency because they may be able to predict future outcomes of alcohol use or depressive symptoms, or at least see correlations between these behaviors and resiliency (Goldstein et al., 2013; Green et al., 2014).

Trauma and Adaptive Coping

In addition to resiliency, the utilization of adaptive coping strategies may be useful in bettering outcomes after PTEs. Coping is defined as the ways an individual responds to stress and can be helpful in confronting stressful situations such as PTEs (Carver, Weintraub, & Scheier, 1989). While resiliency is more trait based, adaptive coping is learned and situational. Research has identified two types of coping: problem-focused coping, in which the individual attempts to solve the problem that is causing them stress, and emotion-focused coping, in which the individual tries to reduce the negative emotional impact that a stressor has on them (Carver et al., 1989). Individuals

tend to use problem-focused coping when they feel that something can be done to change a situation (Carver et al., 1989). While problem-focused coping is helpful since it includes a person actively taking steps to solve their dilemma, emotion-focused coping can either be adaptive (thinking positively about the situation) or maladaptive (denying that the stressful situation exists) (Carver et al., 1989).

Several aspects of problem-focused coping have been proposed (Carver et al., 1989). These include *active coping*, *planning*, *suppression of competing activities*, *restraint coping*, and *seeking social support*. *Active coping* occurs when an individual takes steps to remove or avoid stressors (Carver et al., 1989). Another important aspect of adaptive coping is planning how to deal with a stressor (Carver et al., 1989). For example, if an individual experiences a PTE but plans to cope with it adaptively, they may be less likely to turn to alcohol or other drugs as a coping mechanism. *Suppression of competing activities* occurs when an individual ignores other obligations and avoids distractions in order to confront their stressor head-on (Carver et al., 1989). *Restraint coping* means that a person is planning on dealing with a stressful situation when the ideal time comes (Carver et al., 1989). They are not passively avoiding the stressor, only planning on confronting it at the right time. Individuals may seek *social support* for instrumental reasons, such as asking for advice or information, or emotional reasons, such as receiving sympathy or understanding (Carver et al., 1989). It has been noted that acceptance of an event such as a PTE is vital in coping with it (Carver et al., 1989). Alternatively, emotion-focused coping is usually used when an individual feels like they can do nothing but endure the present stressor (Carver et al., 1989). Emotion-focused coping is analyzed using scales that measure denial, acceptance, and turning to religion

(Carver et al., 1989). Of these, denial is especially problematic. Initially, denial can be helpful in minimizing stress, but overtime denying the reality of a stressor can lead to more serious consequences in the future (Carver et al., 1989). Acceptance is more adaptive and functional than denial since the individual understands that their stressful circumstances are real and can then propose ways to respond to them (Carver et al., 1989). When under stress, people may turn to religion to obtain emotional support and foster individual growth (Carver et al., 1989).

The presence of adaptive coping strategies can increase resilience within an individual (Galatzer-Levy et al., 2012) and those who lack coping skills may turn instead to behavioral disengagement, venting of emotions, and alcohol (Carver et al., 1989). Teaching coping skills to populations such as college students may benefit them in the future by educating them on the coping responses they are using that they may not be conscious of, providing them with more adaptive coping responses to use in the future, and increasing levels of resilience. Furthermore, students who have been provided with adaptive coping skills and exhibit resiliency may be less likely to use alcohol to cope and develop alcohol use disorders, thus bettering their outcomes in school and choices in life. It is especially important to educate college students and provide them with these tools since they are more susceptible to experiencing PTEs than the rest of the population is (Galatzer-Levy et al., 2012).

Summary

Since as many as 66% of college students experience a PTE and 4 out of 5 college students drink alcohol (with about half of those students binge drinking), it is important to understand the relationship between experiencing PTEs and alcohol use in the college

student population (Bonanno, 2004; The National Institute on Alcohol Abuse and Alcoholism). Previous research has shown that the presence of adaptive coping strategies can increase resiliency within an individual and, in turn, increased levels of resiliency can be protective against alcohol use and depressive symptoms following a traumatic event (Galatzer-Levy et al., 2012; Goldstein et al., 2013; Green et al., 2014). This research suggests that possessing adaptive coping skills and high resiliency can modify the relationship between PTEs and alcohol in college students.

Hypotheses

The present study seeks to address the following hypotheses.

- 1) College students who have experienced firsthand trauma, as measured by the LEC-5, will have increased drinking levels, as measured by the Alcohol Use Disorders Identification Test (AUDIT), in comparison to students who have not experienced trauma.
- 2) Problematic drinkers will score lower on resiliency measures (BRS) and have lower adaptive coping skills (Brief-COPE).
- 3) Low resiliency and low adaptive coping skills will explain part of the relationship between history of trauma and problematic drinking in college students.
- 4) Students with a history of trauma who are in the experimental group will report higher levels of adaptive coping after learning about coping skills during the intervention, while students in the control group will not show an increase in their adaptive coping skills.

METHODS AND MATERIALS

Participants

College students from Louisiana State University were recruited using the SONA research system and then surveyed using an online survey engine to administer the measures. Participants were at least 18 years old, had normal or corrected vision, and gave informed consent at the beginning of the study. Participants received extra credit in an undergraduate psychology course after completing the study.

Measures

The Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders & Monterio, 2001; see Appendix A). The AUDIT measures drinking behaviors and feelings associated with those behaviors. There is a self-report version and an interview version. The present study will utilize the self-report version, which takes less time, is easy to administer online, and may produce more accurate answers than the alternative version. The self-report AUDIT contains ten questions which participants answer on a Likert scale from 0-4. To score this measure, the scorer totals the numbers that correspond to the Likert scale. Scores equal to or great than 8 indicate problematic drinking. The AUDIT has high reliability ($r = .86$).

The Brief COPE Inventory (Brief COPE; Carver, 1997; see Appendix B). The Brief COPE measures coping styles using 14 scales: active coping ($\alpha = .68$), self-distraction ($\alpha = .71$), substance use ($\alpha = .90$), denial ($\alpha = .54$), use of instrumental support ($\alpha = .64$), use of emotional support ($\alpha = .71$), venting ($\alpha = .50$), positive reframing ($\alpha = .64$), behavioral disengagement ($\alpha = .65$), planning ($\alpha = .73$), acceptance ($\alpha = .57$), humor ($\alpha = .73$), religion ($\alpha = .82$), and self-blame ($\alpha = .69$) using Likert scale answers.

Reliability of the items is consistently above $\alpha = .50$, and all of the items except for acceptance, denial, and venting exceeded reliability of $\alpha = .60$.

The Life Events Checklist for DSM-5 (LEC-5; Weathers, Blake, Schnurr, Kaloupek, Marx & Keane, 2013; see Appendix C). The Life Events Checklist screens for PTEs that may have occurred to an individual. It is a self-report measure, which includes 16 types of PTEs. Participants record whether a PTE has personally happened to them, they have witnessed it, they have learned about it, it is part of their job, they are not sure, or N/A. Psychometrics have not yet been published for the LEC-5, but it is expected to have similar properties to previous editions since minimal revisions have been made. The original LEC has test-retest correlation of $r = .82, p < .001$ and correlates with other trauma measures such as the Traumatic Life Events Questionnaire ($r = -.55, p < .01$), the Modified PTSD Symptom Scale ($r = -.44, p < .01$), and the PTSD Checklist ($r = -.48, p < .01$) (Gray et al., 2004).

The Brief Resilience Scale (BRS; Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008; see Appendix D). This scale measures resiliency in adults and was developed for undergraduate students. It contains 6 self-report items which participants answer using Likert scale choices. Half of the items are positively worded, while the other half are negatively worded. The negative items are coded in reverse for scoring purposes and the mean score of the 6 items is found. The internal consistency is good, with scores ranging from $\alpha = .80-.91$ across four initial samples. Test-retest reliability measured at $\alpha = .69$ one month after the initial study. This measure shows positive convergent validity for a number of items, such as resilience measures, optimism ($r = .45, p < .01$), purpose in life ($r = .46, p < .01$), social support, ($r = .28, p < .01$), active coping

($r = .40, p < .01$), and positive reframing ($r = .40, p < .01$). It also shows negative correlations with pessimism ($r = -.40, p < .01$), alexithymia ($r = -.47, p < .01$), negative interactions ($r = -.25, p < .01$), behavioral disengagement ($r = -.39, p < .01$), denial ($r = .37, p < .01$), and self-blame ($r = -.27, p < .01$). When compared to similar instruments, the BRS measures resiliency alone, while other measures tend to assess for positive adaption instead of (or in addition to) true resiliency, as defined as recovery from stress.

Demographic Questionnaire (see Appendix E). This questionnaire was used to collect information about the participants and contains items regarding race, sex, and age.

Staying Resilient in Times of Change. This is a program that trains participants to have better coping skills by using video and interactive questions. It teaches about five categories of positive coping: being proactive, being positive, being flexible, being focused, and being organized. This training program was used here as an intervention with the test group of participants to see if they have better coping skills (as measured by the Brief COPE) before or after viewing this training program.

The Year of Pluto - New Horizons Documentary Brings Humanity Closer to the Edge of the Solar System. This online video was used for the control group condition.

Procedure

Pretest Questionnaires

Participants logged into the SONA research system and chose to take this study for extra credit points. They were then redirected to the study web page, which is hosted on SurveyMonkey.com. The first step of the study took the participants roughly half an

hour, for which they earned 1 extra credit point. The participants gave informed consent and then completed the AUDIT, the Brief COPE Inventory, the LEC-5, the BRS, and the demographics questionnaire. Participants had to meet inclusion criteria of being at least 18 years of age.

All participants were given the contact information for the LSU Psychological Services Center, 33 Johnston Hall, Baton Rouge, LA (225-578-1494) and The Phone (225-924-3900) in the event that this study was upsetting to them or they needed additional resources regarding trauma, drinking, or coping.

Intervention and Control

Following the initial questionnaire, participants were categorized as “has experienced trauma” or “has not experienced trauma.” Then, participants were stratified into two groups with an equal number of people who have and have not experienced trauma in each group. The first group was emailed a video training to view entitled *Staying Resilient in Times of Change* (Regents of the University of Minnesota, 2014). This video contains both sound and closed captioning, so controls for hearing or eyesight conditions were not needed, aside from having normal or corrected vision. This group was given additional extra credit points (2 points) for completing this activity. This portion of the study took one hour to complete and was completed one week after the initial questionnaire. Participants were instructed not to take the built in questionnaires and quiz in the training video as to protect their identities and not take away from the objectives of the present study.

The control group was emailed a video entitled *The Year of Pluto - New Horizons Documentary Brings Humanity Closer to the Edge of the Solar System* to view. This is a

scientific documentary and is not predicted to influence the outcomes of the control participants in any way. This video is 1 hour long and participants were awarded 2 additional extra credit points for completing this activity.

Posttest Questionnaire

One week after the intervention (two weeks after the initial questionnaire), the experimental and control groups completed a posttest questionnaire (Appendix F). The Brief COPE Inventory was repeated and used as the posttest, but only items that correlate with elements learned in the training video were be scored. These items correspond with numbers 2, 5, 7, 12, 14, 15, 16, 18, 21, 23, 24, and 25 on the Brief COPE. The posttest took approximately half an hour and participants were awarded 1 extra credit point.

Overall, the study took no more than 120 minutes total and participants earned four extra credit points for completing the study in its entirety.

Results

Descriptive statistics of the participants' scores on each pre-test measure can be found in Table 1.

Hypothesis 1 was not supported in that the number of firsthand traumatic events a student experienced did not correlate with increased problematic drinking. The correlation between traumatic events in the AUDIT was $r = .011$ ($p > .05$). When repeated with the nondrinkers removed from the sample, there was no significant change. In a linear regression between number of traumatic events and AUDIT scores, history of trauma did not predict problematic alcohol use ($B = .011$, $p > .05$, $R^2 = .000$).

Hypothesis 2 was supported in that problematic drinking was more associated with maladaptive coping mechanisms. A mediation analysis (figure 1) showed that there

was a significant relationship between using substances to cope, and AUDIT scores ($b = .8157, p < .001$). There was also a significant relationship between behavioral disengagement and AUDIT scores ($b = .7366, p < .05$). The BRS (resiliency) was a significant mediator ($b = 1.0895, p < .05$). The total indirect effect of the mediators, including those that were insignificant, was $b = .0161, p > .05$. These findings were supported with correlations between AUDIT scores and behavioral disengagement, and AUDIT scores and substance use to cope.

The mediation analysis discussed previously showed no direct effect between trauma exposure and AUDIT scores ($b = .0040, p > .05$) for hypothesis 3. There was also no significant relationship between trauma exposure and its mediators. The mediation analysis should not be viewed as an appropriate model because of the lack of relationship between trauma and the other variables ($R^2 = .177, F = .329, p < .001$). Rather, this analysis models the relationship between some of the mediators and the dependent variable (AUDIT scores).

Hypothesis 4 was not supported in that there were no changes in adaptive coping skills for the experimental group before and after intervention. There were also no significant differences in use of adaptive coping skills prior to the intervention in the experimental vs. control group. A profile analysis was used to examine the differences in positive coping strategies pre- and post- intervention between the experimental and control groups. There were no significant differences in adaptive coping strategies between subjects (experimental vs. control group) (Wilk's $\lambda = .949, F(6,6) = 7.32, p > .05$). There were also no significant differences for the coping strategies within subjects (pre vs post test) (Wilk's $\lambda = .916, F(6,6) = 1.240, p > .05$). There was not an

interaction between the experimental vs. control group and the (pre- vs. post- test).

Therefore, the intervention had no effect (Wilk's $\lambda = .911$, $F(6,6) = 1.325$, $p > .05$).

When repeated with the nondrinkers removed from the sample, there was no significant change.

Discussion

The present study examined the relationships between traumatic events, alcohol use, coping skills, and resiliency in the college student population. Since previous research has found that as many as 66% of college students experience a PTE, it is important to examine the prevalence of trauma in the college students studied here (Bonnano, 2004; Read et al., 2011). Since students who have experienced a PTE often drink alcohol at problematic levels, the present study examined alcohol use in students with first hand trauma to see if students who had experienced more PTEs drank more alcohol, as predicted in Hypothesis 1 (Berenz et al., 2016). Hypothesis 2 predicted that problematic drinkers would score lower on measures of resiliency and adaptive coping skills, since prior research has found a relationship between alcohol use and these skills (Green et al., 2014). Our third hypothesis predicted that low resiliency and low adaptive coping skills would explain part of the relationship between history of trauma and problematic drinking. The fourth and final hypothesis predicted that students who were given coping skills training would improve on coping skills over time. Partial support was found for hypothesis 2, but the other hypotheses were not supported.

Results from Hypothesis 2 revealed that problematic drinkers tended to use significantly more maladaptive coping skills than students without drinking problems. Specifically, problematic drinkers had a tendency to report turning to substance use and

behavioral disengagement as coping mechanisms. This is supported by the previous research of Carver et al. (1989), which found that people who lack adaptive coping strategies are likely to turn to alcohol or other maladaptive coping mechanisms. The other main hypotheses of the current study were not supported. This may have been due to the fact that only 14% of the participants were problematic drinkers as well as the fact that firsthand traumatic experience was not a significant variable. These factors may also account for why the findings of the present study are not consistent with the previous literature.

This study had several limitations. First, almost everyone in the sample (89.6% of participants) had experienced firsthand trauma. A recent flood that occurred in the greater Baton Rouge area (4 months before data collection began) can account for much of this. Many students reported experiencing a natural disaster as their only means of firsthand trauma. Another limitation of this study was that very few students reported heavy drinking levels, which restricted the range for the regression analyses. A further limitation may be that video teaching is not an effective way of improving coping strategies, or that students may not have actually watched the videos since there was no way to track this.

The present study found that college students who have experienced firsthand trauma and are problematic drinkers are likely to use maladaptive coping mechanisms. According to the findings of this study, it may be advantageous to teach adaptive coping skills to students who drink problematically, as they may be drinking as a negative means of coping. Teaching students adaptive coping skills may help prevent alcohol use problems in the college student population. However, since the coping video training in

the present study was not effective, coping strategies should be taught in a different format. For example, previous research has found online coping training to be effective when paired with coaches that could be contacted by phone or email (Rychtarik, McGillicuddy & Barrick, 2015). Future studies should be done on alcohol as a means of coping in the college student population, especially in a sample with a greater division of students who had experienced firsthand trauma versus those who had not. Future studies should also study different age groups to see if college students are a unique population in using alcohol as a means to cope. The way students learn coping mechanisms should be examined to see if video learning is an ineffective teaching strategy.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monterio, M. G. (2001). *The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care*. World Health Organization.
- Berenz, E. C., Cho, S. B., Overstreet, C., Kendler, K., Amstadter, A. B., & Dick, D. M. (2016). Longitudinal investigation of interpersonal trauma exposure and alcohol use trajectories. *Addictive Behaviors, 53*, 67-73.
doi:10.1016/j.addbeh.2015.09.014
- Bonnano, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely adverse events? *American Psychologist, 59*(1), 20-28. doi: 10.1037/0003-066X.59.1.20
- Cadigan, J. M., Martens, M. P., & Herman, K. C. (2015). A latent profile analysis of drinking motives among heavy drinking college students. *Addictive Behaviors, 51*, 100-105. doi:10.1016/j.addbeh.2015.07.029
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief COPE. *International Journal of Behavioral Medicine, 4*(1), 92-100.
doi:10.1207/s15327558ijbm0401_6
- Carver, C. S., Weintraub, J. K., & Scheier M. F. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267-283. doi: 10.1037/022-3514.56.2.267

College Drinking. (n.d.). Retrieved March 24, 2016, from

<http://www.niaaa.nih.gov/alcohol-health/special-populations-co-occurring-disorders/college-drinking>

Galatzer-Levy, I. R., Burton, C. L., Bonanno, G. A. (2012). Coping flexibility, potentially traumatic life events, and resilience: A prospective study of college student adjustment. *Journal of Social and Clinical Psychology, 31*(6), 542-567. doi: 10.1521/jscp.2012.31.6.542

Goldstein, A. L., Faulkner, B., & Wekerle, C. (2013). The relationship among internal resilience, smoking, alcohol use, and depression symptoms in emerging adults transitioning out of welfare. *Child Abuse & Neglect, 37*(1), 22-32. doi: 10.1016/j.chiabu.2012.08.007

Gray, M. J., Litz, B. T., Hsu, J. L., & Lombardo, T. W. 2004. Psychometric Properties of the Life Events Checklist. *Assessment, 11*(4), 330-341. doi: 10.1177/1073191104269954

Green, K. T., Beckham, J. C., Youssef, N., & Elbogen, E. B. (2014). Alcohol misuse and psychological resilience among U.S. Iraq and Afghanistan era veterans. *Addictive Behaviors, 39*(2), 406-413. doi:10.1016/j.addbeh.2013.08.024

Johnson, N., Dinsmore, J. A., & Hof, D.D. (2011). The relationship between college students' resilience level and type of alcohol use. *International Journal of Psychology: A Biopsychosocial Approach, 8*, 67-82.

Lalande, K. M., and Bonanno, G. A. (2011). Retrospective memory bias for the frequency of potentially traumatic events: A prospective study. *Psychological*

- Trauma: Theory, Research, Practice, and Policy*, 3(2), 165-170. doi:
10.1037/a0020847
- McCanlies, E. C., Mnatsakanova, A., Andrew, M. E., Burchfiel C. M., & Violanti, J. M. (2014). Positive psychological factors are associated with lower PTSD symptoms among police officers: post hurricane Katrina. *Stress and Health*, 30, 405-415. doi: 10.1002/smi.2615
- National Aeronautics and Space Administration. (2015). *The Year of Pluto - New Horizons Documentary Brings Humanity Closer to the Edge of the Solar System* (Video). United States: NASA.
- Norris, F. H. (1992). Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Counseling and Clinical Psychology*, 60(3), 409-418. doi: 10.1037/0022-006X.60.3.409
- Read, J.P., Ouimette, P., White, J., Colder, C., & Farrow, S. (2011). Rates of *DSM-IV-TR* trauma exposure and posttraumatic stress disorder among newly matriculated college students. *Psychological Trauma: Theory, Research, Practice, and Policy*, 3(2), 148-156. doi:10.1037/a0021260
- Regents of the University of Minnesota. (2014). *Staying Resilient in Times of Change* (Video). United States: University of Minnesota Extension.
- Rinker, D. V., and Neighbors, C. (2015). Latent class analysis of DSM-5 alcohol use disorder criteria among heavy-drinking college students. *Journal of Substance Abuse Treatment*, 57, 81-88. doi:10.1016/j.jsat.2015.05.006

Rychtarik, R. G., McGillicuddy, N. B., & Barrick, C. (2015). Web-based coping skills training for women whose partner has a drinking problem. *Psychology Of Addictive Behaviors*, 29(1), 26-33. doi:10.1037/adb0000032

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The Brief Resilience Scale: Assessing the ability to bounce back. *Journal of Behavioral Medicine*, 15, 194-200. doi:10.1080/10705500802222972

Substance Abuse and Mental Health Services Administration. (2016). Binge drinking: Terminology and patterns of use. Retrieved from <http://www.samhsa.gov/capt/tools-learning-resources/binge-drinking-terminology-patterns>

Weathers, F.W., Blake, D.D., Schnurr, P.P., Kaloupek, D.G., Marx, B.P., & Keane, T.M. (2013). *The Life Events Checklist for DSM-5 (LEC-5)*. Instrument available from the National Center for PTSD at www.ptsd.va.gov

APPENDIX A

The Alcohol Use Disorders Identification Test: Self-Report Version

The Alcohol Use Disorders Identification Test: Self-Report Version

PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

APPENDIX B

Brief COPE

1 = I haven't been doing this at all

2 = I've been doing this a little bit

3 = I've been doing this a medium amount

4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation I'm in.
3. I've been saying to myself "this isn't real."
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've been giving up trying to deal with it.
7. I've been taking action to try to make the situation better.
8. I've been refusing to believe that it has happened.
9. I've been saying things to let my unpleasant feelings escape.
10. I've been getting help and advice from other people. ???
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light, to make it seem more positive.
13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of the fact that it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

APPENDIX C

Life Events Checklist for DSM-5

LEC-5

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally; (b) you witnessed it happen to someone else; (c) you learned about it happening to a close family member or close friend; (d) you were exposed to it as part of your job (for example, paramedic, police, military, or other first responder); (e) you're not sure if it fits; or (f) it doesn't apply to you.

Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

<i>Event</i>	<i>Happened to me</i>	<i>Witnessed it</i>	<i>Learned about it</i>	<i>Part of my job</i>	<i>Not Sure</i>	<i>Doesn't Apply</i>
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)						
2. Fire or explosion						
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)						
4. Serious accident at work, home, or during recreational activity						
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)						
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)						
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)						
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)						
9. Other unwanted or uncomfortable sexual experience						
10. Combat or exposure to a war-zone (in the military or as a civilian)						
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)						
12. Life-threatening illness or injury						
13. Severe human suffering						
14. Sudden violent death (for example, homicide, suicide)						
15. Sudden accidental death						
16. Serious injury, harm, or death you caused to someone else						
17. Any other very stressful event or experience						

APPENDIX D
The Brief Resilience Scale



Brief Resilience Scale (BRS)

Please respond to each item by marking <u>one box per row</u>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BRS 1	I tend to bounce back quickly after hard times	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 2	I have a hard time making it through stressful events.	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
BRS 3	It does not take me long to recover from a stressful event.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 4	It is hard for me to snap back when something bad happens.	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
BRS 5	I usually come through difficult times with little trouble.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 6	I tend to take a long time to get over set-backs in my life.	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

Scoring: Add the responses varying from 1-5 for all six items giving a range from 6-30. Divide the total sum by the total number of questions answered.

My score: _____ item average / 6

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International journal of behavioral medicine, 15*(3), 194-200.

APPENDIX E
Demographic Questionnaire

Please answer the following questions.

- 1) Do you have normal or corrected vision?
 - a. Yes
 - b. No (Exclusion criteria)

- 2) Are you at least 18 years of age? (Exclusion criteria)

If Yes to Both:

- 3) Age: _____

- 4) Sex: (circle one)
 - a. Female
 - b. Male
 - c. Prefer not to say

- 5) Race: (circle one)
 - a. White (Non-Hispanic)
 - b. African American
 - c. Asian/Pacific Islander
 - d. Hispanic/Latino
 - e. Other (please specify): _____

APPENDIX F

A selection of the Brief COPE

1 = I haven't been doing this at all

2 = I've been doing this a little bit

3 = I've been doing this a medium amount

4 = I've been doing this a lot

2. I've been concentrating my efforts on doing something about the situation I'm in.
5. I've been getting emotional support from others.
7. I've been taking action to try to make the situation better.
12. I've been trying to see it in a different light, to make it seem more positive.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
21. I've been expressing my negative feelings.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.

TABLE 1
Baseline Participant Information

	Overall (n=115)	Experimental (n=58)	Control (n=57)	P-value
Age	<i>M</i> =20.07 <i>SD</i> =2.223	<i>M</i> =20.09 <i>SD</i> =2.618	<i>M</i> =20.05 <i>SD</i> =1.757	<i>ns</i>
AUDIT	<i>M</i> =4.97 <i>SD</i> =4.560	<i>M</i> =4.98 <i>SD</i> =4.431	<i>M</i> =4.96 <i>SD</i> =4.728	<i>ns</i>
Self-Distraction	<i>M</i> =4.77 <i>SD</i> =1.747	<i>M</i> =4.88 <i>SD</i> =1.846	<i>M</i> =4.96 <i>SD</i> =1.651	<i>ns</i>
Active Coping	<i>M</i> =4.92 <i>SD</i> =1.911	<i>M</i> =4.98 <i>SD</i> =1.878	<i>M</i> =4.86 <i>SD</i> =1.959	<i>ns</i>
Denial	<i>M</i> =2.96 <i>SD</i> =1.703	<i>M</i> =2.90 <i>SD</i> =1.672	<i>M</i> =3.02 <i>SD</i> =1.747	<i>ns</i>
Substance Use	<i>M</i> =2.79 <i>SD</i> =1.454	<i>M</i> =2.74 <i>SD</i> =1.446	<i>M</i> =2.84 <i>SD</i> =1.473	<i>ns</i>
Emotional Support	<i>M</i> =4.70 <i>SD</i> =2.000	<i>M</i> =4.57 <i>SD</i> =1.966	<i>M</i> =4.84 <i>SD</i> =2.024	<i>ns</i>
Instrumental Support	<i>M</i> =4.27 <i>SD</i> =1.948	<i>M</i> =4.21 <i>SD</i> =1.926	<i>M</i> =4.33 <i>SD</i> =1.985	<i>ns</i>
Behavioral Disengagement	<i>M</i> =2.90 <i>SD</i> =1.398	<i>M</i> =2.83 <i>SD</i> =1.403	<i>M</i> =2.96 <i>SD</i> =1.401	<i>ns</i>
Venting	<i>M</i> =3.96 <i>SD</i> =1.744	<i>M</i> =3.97 <i>SD</i> =1.835	<i>M</i> =3.95 <i>SD</i> =1.663	<i>ns</i>
Positive Reframing	<i>M</i> =4.57 <i>SD</i> =2.120	<i>M</i> =4.78 <i>SD</i> =2.086	<i>M</i> =4.35 <i>SD</i> =2.151	<i>ns</i>
Planning	<i>M</i> =4.53 <i>SD</i> =2.019	<i>M</i> =4.59 <i>SD</i> =1.947	<i>M</i> =4.47 <i>SD</i> =2.105	<i>ns</i>
Humor	<i>M</i> =3.39 <i>SD</i> =1.858	<i>M</i> =3.40 <i>SD</i> =1.863	<i>M</i> =3.39 <i>SD</i> =1.868	.001
Acceptance	<i>M</i> =5.33 <i>SD</i> =2.122	<i>M</i> =5.41 <i>SD</i> =2.061	<i>M</i> =5.25 <i>SD</i> =2.198	<i>ns</i>
Religion	<i>M</i> =4.10 <i>SD</i> =2.170	<i>M</i> =4.38 <i>SD</i> =2.308	<i>M</i> =3.82 <i>SD</i> =2.001	<i>ns</i>
Self-Blame	<i>M</i> =3.97 <i>SD</i> =1.969	<i>M</i> =4.00 <i>SD</i> =2.086	<i>M</i> =3.93 <i>SD</i> =1.860	.036
Happened to me	<i>M</i> =2.99 <i>SD</i> =2.560	<i>M</i> =3.03 <i>SD</i> =2.734	<i>M</i> =2.95 <i>SD</i> =2.394	.033
Witnessed it	<i>M</i> =2.91 <i>SD</i> =2.577	<i>M</i> =2.84 <i>SD</i> =2.262	<i>M</i> =2.98 <i>SD</i> =2.882	<i>ns</i>
Learned about it	<i>M</i> =5.72 <i>SD</i> =4.780	<i>M</i> =5.60 <i>SD</i> =4.592	<i>M</i> =5.84 <i>SD</i> =5.003	<i>ns</i>
Part of my job	<i>M</i> =.50 <i>SD</i> =1.734	<i>M</i> =.40 <i>SD</i> =1.256	<i>M</i> =.61 <i>SD</i> =2.119	<i>ns</i>
BRS	<i>M</i> =3.125 <i>SD</i> =.929	<i>M</i> =3.095 <i>SD</i> =.924	<i>M</i> =3.155 <i>SD</i> =.962	<i>ns</i>

FIGURE 1
 Mediation Role of Coping Mechanisms and Measures of Resiliency

