THE EFFECT OF SHAME AND TRAUMA ON SUBSTANCE USE BEHAVIOR

by

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Abstract

Young adults who have experienced many traumatic events in their childhood tend to have high frequencies of substance use, but does shame mediate the association between trauma and substance use? Shame is the feeling of inferiority and self-blaming, and it can often inhibit an individual's personal relationships and self-concept of identity. We frequently see it experienced in people who struggle with substance use disorders, shame can often become a means to cope. Especially in college age children, where shame-proneness is heavily associated with substance use problems. This empirical study uses self-report questionaries to assess frequencies of these variables. The study was conducted at a public, northeastern liberal arts college and 42 participants were recruited from the Psychology Participant Pool. They reported their levels of shame, exposure to community violence and frequency of substance use. The average age of sample was 19.71 years (range = 18-25). Self-reported ethnicities were White (40.9%) , Hispanic (20.5%), Multiracial (18.2%), Asian (11.4%), and Black (4.1%). Self-reported sexualities were Heterosexual (61.4%), Bisexual (20.5%) , Homosexual (11.36%) and other (6.8%). Self-reported genders were Female (69.8%), Non-binary (16.3%), Male (11.6%) and Transgender Male (2.3%). The results of the study supported previous research with all three variables having a significant positive association with each other. More exposure to trauma in childhood is associated with higher levels of shame in college; higher levels of shame in college was associated with more substance use, specifically marijuana use. This research suggests that shame needs to be recognized as an impactful emotional and cognitive response to substance use and trauma. It should also become implemented into treatment programs for trauma and addiction recovery.

Keywords: Shame, Trauma, Substance Use

The Effect of Shame and Trauma on Substance Use Behavior

Most individuals have experienced a traumatic event in their lifetime. Some may have grown up in neighborhoods where violence was prevalent, and others may have witnessed violence in their own homes. Individuals who have experienced many traumatic events can struggle to find ways to cope, and often it can lead to substance use issues (McCauley & Killen, 2012). While there is a clear relationship between trauma and substance use, researchers are still looking to find what mediates this relationship. Finding this mediation is essential to substance use recovery, because it can identify one of the core issues that keeps the addiction cycle going.

Shame is a complex emotion that is not often explored when discussing substance use issues, but it's impact should not be undercut. Shame has been recognized as a mediator between partner violence and depression (Shorey & Sherman, 2011), peer victimization and mental health issues (Irwin, Li and Craig, 2019) and stressful life events and paranoia (Johnson, Jones and Lin, 2014). The commonality between all three studies is shame's relationship to mental health issues. Correlational studies have found that shame has a negative association with self-compassion (Proeve, Anton & Kenny, 2018). Similarly, it was found that individuals with a history of childhood physical and emotional abuse who reported low levels of self-compassion were directly predicted to have substance use issues in adulthood (Miron, Orcutt & Hannan, 2014). If shame is a common mediator to mental health issues related to self-compassion and self-compassion is a factor between trauma and substance use issues, then shame may possibly mediate the association between trauma and substance use behavior. This study aims to examine the proposed mediator of shame, to see whether it has an impact on trauma survivors and their substance use behavior.

The Experience of Shame

Shame is a debilitating emotion often experienced as feeling inferior, powerless, or self-conscious (Greenberg & Pavio, 1997) It drives many of our behaviors, typically as an act of avoidance of any shame-inducing activities. (Dearing, Stuewig and Tagney, 2005). While it is a powerfully negative emotion, many people often discount that shame can develop over time and can be influenced by external factors, such as childhood trauma (Rahim & Patton, 2015; Aakvaag & Thoresen, 2019). Understanding how shame develops is important, given that prior research shows that people who experience more shame are more likely to engage in self-destructive behaviors, such as substance use (Luoma & Kohlenberg, 2012; Rahim & Patton, 2015) and suicidal ideation (Rahim & Patton, 2015).

Other research has recognized an importance in distinguishing between guilt and shame in order to differentiate reactions to emotions. For example, while shame can be largely debilitating, and can affect one's central identity, it cannot motivate an individual in the way guilt can (Dearing, Stuewig and Tagney, 2005). Helen Block Lewis (1971) defines the difference as shame being the negative feeling about oneself and guilt being the negative feeling about a specific event. So while one can feel guilt about an action, it can be separated from the shame one feels about themselves after doing such action. In another study, participants were asked about experiences with childhood violence, revictimization, shame, guilt and social support. They found that shame was significantly associated with revictimization while guilt was not (Aakvaag & Thoresen, 2019). Research like this shows how crucial it is to inform health care workers that shame is high risk of future victimization, and to work on prevention of revictimization with violence-exposed children by addressing shame.

There is also a meaningful difference between internal shame and external shame. Internal shame is experienced from self-perception, being one's own voyeur. External shame is experienced from outer perception; an understanding that others are able to perceive oneself (Gilbert, 1998). In a meta-analysis of shame, guilt and depression, external shame was more strongly associated with depressive symptoms than internal shame (Kim & Jorgensen, 2011). Shame is strongly associated with mental health issues such as depression, and those with depression have very low levels of self-compassion. Self-compassion differs from shame as it is the attitude of self-acceptance while shame is the attitude of self-judgment. Correlational research has found that shame has a negative association with self-compassion (Proeve, Anton & Kenny, 2018). The lack of self-compassion in shame-prone individuals makes it more likely for them to resort to self-harming behaviors, such as substance use ((Miron, Orcutt & Hannan, 2014).

Shame and Substance Use

Substance misuse is the harmful use of substances for purposes that are not medically mandated. Substance use disorder is the dependency or addiction to these substances. While a person may be prescribed a certain substance, their overuse of the substance can be defined as misuse (NIDA, 2020). Substance misuse can cause harm to the brain and can alter functions such as decision making, memory processing, learning abilities or making judgements. Substance misuse can also lead physical diseases like lung and heart disease, or even death by overdose (NIDA, 2020).

It is crucial that shame is studied and considered when discussing and working with people with substance use issues. Research has shown that individuals with substance use have higher levels of shame than people with other mental health issues and individuals without any

mental health issues (Meehan & O'Connor, 1996). In a study involving college age students, shame-proneness was generally positively correlated with substance use problems (Dearing, Stuewig & Tagney, 2005). Shame in the context of addiction can be understood as a factor that contributes to the development, maintains the addiction and as an effect of addiction issues. While substances can be used as a coping mechanism for shame, they can also create additional shame. This creates a cycle of problematic behaviors that cannot be aided with substance use. Research has shown that shame can sometimes help with this cycle by increasing motivation to seek treatment (Rahim & Patton, 2015). Its role in addiction is complex, because it cannot only create the addiction, but it can help end it as well.

One of the main sources of shame and addiction is often family related. Research by Cook utilizes Bowlby's attachment theory (1988) to explain the relationship between early experiences with caregivers and the development of substance use issues later in life. He states that shame is often experienced when an individual's desire for a relationship is broken by another individual not desiring the relationship. As a child grows up with a disturbance in attachment to their caregivers, (they are more prone to anti-socialness) which is strongly related to later alcoholic outcome (Cook, 1991).

With that being known, there still isn't nearly enough research on the interactions of shame with substance use and childhood trauma. Shame can develop after a trauma as a means of processing the event (Lee, Scragg & Turner, 2001). In other words, individuals who have experienced a traumatic event may begin to develop various methods to understand the event such as attributed blame. For children, this can become a common response as they don't have a vast life experience to give them context about what had happened. Adolescents have great difficulty voicing their issues due to feelings of shame and fear of consequence. Young women

for example, are typically silenced in social situations, especially in the context of sexual abuse. Due to this silencing, young women may begin to internalize their experience and self-shame (Brown, 2006). This overwhelming repression of emotions causes young women to become more vulnerable to suicidal ideation and various mental health issues (Rahim & Patton, 2015). This increases their likelihood to use substances as a coping mechanism for their shame.

Post-Traumatic Stress Disorder and Substance Use

A traumatic event is an event that has caused physical, emotional and psychological harm. Psychological trauma is the immediate and long-lasting psychological response given by the individual who has experienced this traumatic event. Many people who experience psychological trauma have difficulty coping with the negative emotions and thoughts they face. They may feel isolated and shameful of their experiences and mental state. This can lead to harmful coping habits like substance misuse.

There are high rates of comorbidity between PTSD and Substance Use Disorder. In a 2010 National Epidemiologic Survey on Alcohol and Related Conditions, 46.4% of individuals of PTSD meet the criteria for a substance use disorder (American Psychiatric Association, 2000). The National Comorbidity Survey found that both men and women with PTSD are more likely to have alcohol and drug use disorders than those without PTSD. However, previous research has found that in adolescent samples, trauma exposed women are more likely than trauma exposed men to develop a substance use disorder. For example, one study found that trauma exposed women were more likely to have an alcohol dependency than trauma exposed men (Breslau, 2003). Similarly, another study on adolescents found that exposure to a traumatic event in childhood predicted substance use disorders in young women, but not in men (Becker & Grilo, 2006).

While observing the relationship between trauma and substance use, one study found that one-third of participants diagnosed with PTSD symptoms used substances before their traumatic event. They also found that two-thirds of participants diagnosed with PTSD symptoms began using substances after the traumatic event (Mills & Hlth, 2006). This means that two-thirds of the participants were likely using substances to cope with the after-effects of the traumatic event as a form of self-medicating. Self-medicating is when an individual uses substances to cope with mental health issues and/or troubling emotions such as emotional pain caused by trauma. There is also a possibility that the lifestyle associated with the use of substances led to a traumatic event causing the PTSD. Currently, there is a lack of epidemiological research that looks into the causal relationship between these two disorders.

Previous research has also found that unresolved issues with sexual abuse can result in more severe and persistent addiction which in turn, can affect parenting practices. In a study by Marcenko, Kemp and Larson, childhood abuse had a significant relationship with symptoms of psychological distress, heavy alcohol or other drug use and positive parenting attitudes (Marcenko, Kemp & Larson, 2000). This research supports the idea that unresolved childhood abuse has a significant effect on parenting outcomes. In order to treat substance use disorders, programs need to address the issue of childhood physical and sexual abuse.

Shame can be a mediating factor between trauma and substance use as it has a relationship with both variables. Research has shown that there is a causal relationship between shame and self-harming, specifically substance misuse (Rahim & Patton, 2015). It's also found that shame contributes to the development of addiction (Dearing, Stuewig and Tagney, 2005). Individuals who have experienced childhood trauma and reported low for self-compassion were predicted to have substance use issues in adulthood (Miron, Orcutt & Hannan, 2014).

Correlational studies have also found that shame is negatively associated with self-compassion (Proeve, Anton & Kenny, 2018). Since shame is the common mediator between mental health issues related to compassion and self-compassion is a common factor between trauma and substance use issues, then shame may possibly mediate the association between trauma and substance use. With this being known, more research needs to be applied to shame's impact on trauma related substance use behavior.

Gender and Sexual Identity

A relation needs to be considered between shame, trauma and substance use among different gender groups and sexual minorities because non-cis gender men and non-heterosexual people experiences higher rates of trauma than cisgender men and heterosexual people. Homosexual men report higher rates of alcohol, marijuana, and other drug use compared to their heterosexual peers (Feinstein, B. A., & Newcomb, M. E., 2016). Research has also found that while men have higher rates of substance use than women, their motivations for doing so differ. Men take drugs and engage in risky behaviors in order to be accepted socially more than women do (NIDA, 2020). Women are more likely to self-medicate than men, have a more rapid escalation of addiction than men and are more likely to relapse than men and do so more sporadically (NIDA, 2020). These demographics are important to consider when researching trauma and substance use.

The Present Study

This study examines the association between shame and substance use in young adults. Prior research has shown that individuals with high frequencies of trauma will have high frequencies of substance use (Mills and Hilth, 2006). This association was examined separately for individuals with and without histories of trauma. This study also examines the association

between shame and trauma. In previous research, adolescent girls with high levels of sexual trauma were found to have high levels of shame (Brown, 2006). This study is assessing the association between community violence trauma and shame on college students. The study has collected data from 100 undergraduate students who have self-reported on shame, substance use and history of trauma.

The following research questions will be examined:

1. What is the association between shame and substance use in young adults?
2. What is the association between shame and trauma?
3. What is the association between trauma and substance use in young adults?

Since previous research has shown a significant relationship between trauma and substance use, it was hypothesized that high rates of trauma are associated with high rates of substance use. It was hypothesized that trauma will be significantly associated with higher rates of shame. Lastly it was hypothesized that high rates of shame are associated with high rates of substance use, as shame is the assumed mediator between trauma and substance use.

Method

Participants

Approximately 100 participants were recruited from for this study. Participants were undergraduate Introduction to Psychology students who have voluntarily participated and were recruited from the Introduction to Psychology Pool. Participants were limited to those between the ages of 18-25 in order to focus the sample on emerging adults. The study took approximately 30 minutes to complete and the participants were compensated with either course credit or $7.50, as per New York State guidelines for minimum wage. The survey was administered on-line through Qualtrics. The average age was 19.71 years (range = 18-25). Self-reported ethnicities

were: White (40.9%) , Hispanic (20.5%), Multiracial (18.2%), Asian (11.4%), and Black (4.1%). Self-reported sexualities were Heterosexual (61.4%), Bisexual (20.5%) , Homosexual (11.36%) and other (6.8%). Self-reported genders were Female (69.8%), Non-binary (16.3%), Male (11.6%) and Transgender Male (2.3%). The researchers granted them research credits as compensation for participating in the study. IRB approval was granted to the researchers in order to conduct this study.

Design

Participants accessed their survey through Qualtrics and began by reading through a consent form that explained to them a brief procedure, the benefits and risks, confidentiality and the option to withdraw participation. They were then asked to complete a series of measures that ask about history of trauma, experiences of shame and frequency of substance use.

Measures

Shame. The Experience of Shame Scale Andrews, (Qian & Valentine, 2002) is a 25-item questionnaire that measures three areas of shame: categorical, behavioral and bodily. The categorical shame items are: shame and personal habits, manner with others, sort of person (you are) and personal ability. The behavioral shame items are: shame about doing something wrong, saying something stupid and failure in competitive situations. The bodily shame item is: feeling ashamed of (your) body or any part of it. For each of the three areas of shame, there are three related items addressing an experiential component, a cognitive component and a behavioral component. The shame scale has been used in studies predicting depressive disorder (Andrews,1995) and post-traumatic stress symptoms (Andrews, Brewin, Rose, & Kirk, 2000). The scale has also been used in a cross-sectional study involving depressed patients. They found

that high levels of categorical, behavioral and bodily shame were related to the chronic and recurrent appearance of the disorder (Andrews & Hunter, 1997).

Trauma. The Survey of Exposure to Community Violence (Richters. & Saltzman, 1990) is a 54 item questionnaire measures the frequency at which people are exposed to different threats of violence in their communities and the age of first experience. There are 13 categories of violence that can be either witnessed or self-experienced. The categories are: being threatened, having house being broken into, being arrested, being slapped/hit/punched, getting chased by an individual or gang, being mugged, being sexually assaulted, seeing someone carry a gun or knife (other than a police officer), hearing the sound of gunfire in own community, getting attacked by a knife, being shot at with a gun, seeing someone get killed and getting threatened with death. After each question, there is a 4-point Likert scale that assesses if violence exposure occurred before the age of 18 or after the age of 18. This scale has been used in previous research with undergraduate students with a diverse variety of ethnic backgrounds and has found that those who have experienced community violence suffer from immense anger, anxiety and depression (Rosenthal, 2000).

Substance Use. The Indiana College Substance Use Survey (King & Jun, 2012) is a 39 item survey that assesses substance use frequency, age of first use and environment of first use. There are 14 classes of substances measured by frequency on a 8 point likert scale. The 14 classes of substances are also assessed by the environment of first use, which is either before or after starting college. There are 11 additional items that assess the use of prescription medication and the frequency of alcohol consumption. The 14 classes of substances are identified as cigarettes, e-cigarettes, non-nicotine vaping products, alcohol, marijuana, cocaine/crack, hallucinogens/ecstasy, heroin, methamphetamine, inhalants, prescription stimulants not

prescribed to you, prescription painkillers not prescribed to you, prescription sedatives not prescribed to you and other illegal drugs. This survey has been used in previous research on undergraduate students; all Indiana state universities have been using this survey for over a decade. The survey data has contributed to each universities' creation of school policies and prevention programs.

Results

Association between Trauma and Substance Use

The first research question examined the association between trauma and substance use. In other words, do participants who experience more traumatic events in childhood report higher levels of substance use? It was hypothesized that more trauma would be significantly positively associated with high levels of shame. A Pearson's correlation was computed to assess the association between trauma and substance use. There was a significant, positive correlation between the two variables [$r = 0.318$, $n = 42$, $p = 0.018$]. Overall, there was a strong, positive correlation between trauma and substance use. An increase in community violence was correlated with an increase of substance use. There was a significant correlation between trauma and marijuana use [$r = 0.259$, $n = 42$, $p = 0.047$] but not for tobacco use [$r = 0.147$, $n = 42$, $p = 0.173$] or alcohol use [$r = 0.233$, $n = 42$, $p = 0.064$].

Association between Trauma and Shame

The second research question examined the association between trauma and shame. Essentially, do participants who experience more traumatic events in their childhood report high levels of shame? A Pearson's correlation was computed to assess the association between trauma and shame. There was a significant, positive correlation between the two variables [$r = 0.314$, n

= 42, $p = 0.019$]. Overall, there was a strong, positive correlation between trauma and shame. An increase in childhood trauma is associated with an increase of shame.

Association between Shame and Substance Use

The third research question examined the association between shame and substance use. In other words, do participants who experience high amounts of shame use substances in high frequencies? A Pearson's correlation was computed to assess the association between Substance Use and Shame. There was a significant, positive correlation between the two variables [$r = 0.265$ $n = 42$, $p = 0.041$]. Overall, there was a strong positive association between substance use and shame. An increase in substance use is correlated with an increase of shame.

Discussion

Summary of Results

The first research question looked for the association between trauma and substance use in young adults. The study proposed that high levels of trauma were associated with high levels of substance use. The results supported the hypothesis with a significant positive correlation between trauma and substance use. This means that when an individual has experienced many traumatic events, they are more likely to have substance use issues. The use of substances is likely a coping mechanism for those with PSTD or childhood trauma (Mill & Hlth, 2006). Trauma and substance misuse can be a cause for shame, which can also lead to substance use as a means to cope (Rahim & Patton, 2015). It can also be that the trauma experienced is a result of substance use and the spaces a substance user has to be in. In other words, the environments that a substance user becomes involved in can be potentially dangerous and can increase traumatic experiences.

Since individuals who experience traumatic events may begin to self-blame, the second research question was about the association between shame and trauma. It was proposed that high levels of shame were associated with high levels of trauma. The results supported the hypothesis with a significant positive correlation between these variables. This study demonstrated that individuals that have experienced many traumatic events are more likely to experience shame often. It may be that the shame is a result of the violence being enacted by themselves or others (Lee, Scragg & Turner, 2001). There may also be shame from not being able to protect against the violent acts that have occurred.

Since shame is a common experience for both substance users and trauma survivors , the third research question was about the association between shame and substance use in young adults. It was proposed that high levels of shame would be associated with high levels of substance use. The results supported the hypothesis with a significant positive correlation between the two variables, demonstrating that individuals who experience shame are more likely to use substances. This is consistent with previous research that has found that shame, in the context of addiction, contributes to both its development and maintenance (Meehan & O'connor, 1996). This result is also consistent with research on sexual trauma and addiction, where shame is a factor in internalization and self-harming with substances (Brown, 2006).

Implications

Through this research, we can help people who work in the addiction and recovery field recognize a relationship between shame and their patient's need for treatment. Previous research has found that the self-critical and devaluing thoughts which trigger shame increase the likelihood of self-destructive behaviors. By adding shame as an obstacle to their patient's well-being, they can begin to incorporate acceptance and commitment therapy, also known as ACT

therapy, which directly targets shame in substance use disorders into their practice (Luoma & Kohlenberg, 2012). ACT therapy teaches substance users how to integrate the concepts of acceptance and mindfulness to respond to shame and negative self-judgement. Luoma and Kohlenberg have found that individuals that participated in ACT therapy had lower levels of substance use than those who participated in TAU therapy during the follow-up. This supports the idea that addressing shame and targeting avoidance with acceptance and mindfulness during treatment reduces substance use gradually in participants.

Another useful tool for people who work in the addiction and recovery field are compassion and mindfulness-based approaches. Self-compassion is an emotional regulation strategy meant to create a positive relationship with one's self. Mindfulness is an emotional regulation strategy meant to bring individuals into the present moment, with a heightened awareness of their surroundings. Mindfulness-based stress reduction also known as MSBR, is a mindfulness-based approach to help individuals who struggle with high levels of shame and self-criticism, this training utilizes activities such as mindfulness meditation and yoga. This therapy has been shown to reduced relapse rates in individuals with depression. This approach also increased levels of self-compassion in participants by an average of 9% (Teasdale et al, 2000).

Previous research has shown that there are major differences in both gender and sexual identity for substance users. If the gender and sexuality demographic is utilized for data analysis, the research can be used to help identify mediating factors in LBGTQ substance use behavior. Bisexual people have the highest rates of substance rates amongst all sexualities (Anderson-Carpenter, Rutledge & Mitchell, 2019). If research can target the factors that cause this problem, then it can be worked on through a therapeutic treatment that incorporates identity differences. This could also contribute to research on gendered differences in substance use behavior, due to

focusing on less researched groups such as trans and non-binary people. Gender non-conforming people experience consistent societal bias and discrimination. By researching gender non-conforming people, biological influence can become separated from societal influence. It can also contribute to trans-affirmative care of all health disciplines, but especially mental health and recovery. There are also major differences between the way cis women and cis men use substances. For example, while men have higher rates of substance use than women, their motivations for doing so differ. Men take drugs and engage in risky behaviors in order to be accepted socially more than women do (NIDA, 2020). Women are more likely to self-medicate than men, have a more rapid escalation of addiction than men and are more likely to relapse than men and do so more sporadically (NIDA, 2020). If these differences are acknowledged in addiction programs, cis women may have a greater chance of overcoming their addictions.

There is a need to change the culture on college campuses so that students don't feel ashamed about substance use or mental illness, thus making themselves more likely to seek help. College administrators/faculty should aim for a harm reduction approach that reduces shame in their students. By doing this instead of an abstinence only approach, they may be able to better manage the shame addiction cycle. For college age students, shame-proneness is strongly associated with substance use issues (Dearing, Stuewig & Tagney, 2005). As mentioned earlier in the literature review, shame can result from an addiction, but it can also cause the addiction to continue (Rahim & Patton, 2005). If students are experiencing more shame from their administration and peers for their substance use issues, they are less likely to recover because their addiction cycle will continue. Similar to the compassion-based approach in addiction programs, school's need to extend compassion to their students in recovery. By doing this, it may

become more likely that students will approach counseling centers and seek out the help that they need.

Limitations

There were a few limitations to this study. The first limitation was the small sample size of only 42 participants. Sample size is a major indicator of precision in data analysis because it is meant to represent the general population. A larger sample size increases the chances that one will be able to identify the true relationship between variables. While there were approximately 100 participants recruited for the study, there was only 42 at the time that data analysis was conducted. If the analysis was done with the full sample, the results could have varied significantly. It is important to note, however, that trauma was highly reported in a small sample. The population was sampled from Introduction to Psychology students. Interest in the course could come from a variety of factors, one of which may be to have a better understanding of one's self. This could have influenced a highly traumatized individual to take the class. There was also a high frequency of LGBTQ identified individuals with only 64% of the participants identifying as heterosexual. This may be because the public college that participants came from is an openly LGBT friendly campus, and that could have played a factor into some student's decision to attend the school.

Another limitation was the type of sample. While using college students is an easily accessible and cost-effective method to conduct research, it also has its difficulties. A majority of Americans have not completed a college degree, and this may because of financial difficulties, familial difficulties or general disinterest. College students have a level of accessibility that most Americans do not, so these results can not accurately depict the general population. By

broadening the sample location, the research could have a much more accurate view into the shame, trauma and substance use patterns of the general population.

Another limitation to the research was there being only one question on sexual violence rather than a multiple question survey. The only question asked was about being sexually assaulted, but research considering sexual minority stressors could be elaborated on if there was a survey for sexual minority trauma. By specifying the type of trauma that individuals are experiencing, the research would be better able to target the root of shame and substance use issues.

Future Directions

As mentioned in the literature review, there is a significant relationship between gender identity, sexual identity and substance use. When working with patients who struggle with substance use disorder, their various identities need to be taken into account. Future research should focus on analyzing the differences between varying gender and sexuality demographics. When creating gender demographics, researchers should ensure to distinguish between cis and trans people because they have largely differing experiences both socially and psychologically.

The results of this study support the idea that high levels of shame, trauma and substance e use are positively associated with each other. This preliminary research is the first step to an even bigger research question, does shame mediate the association between trauma and substance use. To do this, one would need to formally test the hypothesis through mediation analysis of a larger sample size. Ideally, this future study would have two groups: those with a higher history of trauma who abuse substances and another group without a history of trauma who abuse substances. If the hypothesis is correct, shame should mediate the relationship in the former group only. Future research should also have a more representative population sample for

the sake of its application in policy. Utilizing a software such as M-Turk can assist in gathering more participants from a broader location.

Future research should also specify the type of trauma to help target where shame and substance use issues stem from. Some types of trauma may correlate with higher levels of shame than others. Similarly, some types of trauma may correlate with higher levels of substance use than others. By conducting research that distinguishes between the various types of trauma, the results can provide much more meaningful application to individual's lives.

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