## Original Paper

# Drug Use/Abuse and Addiction: Perceived Connections to Criminal Behavior and Sadipathic Offending 

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#### Abstract

This project investigated the beliefs that people have about the connections between alcohol and drug use/abuse, addiction, criminal behavior, and sadipathic offending. Data were collected from 605 respondents via a quantitative survey. Overall, the respondents tended to lean in the direction that alcohol and drug use/abuse and addiction were associated with crime, violence, and victimizing others. Those from certain ethnic/racial groups were the most likely to state there are connections (e.g., Hispanic, Asian, White). Women were more likely to discern a connection between sadipathy and substance use/abuse, addiction, and victimizing others. Reliability analysis demonstrated a high level of internal consistency across the scaled items ( $\alpha=.848$ ). The findings support the extant literature showing that substance use/abuse and addiction are associated with criminal behavior and sadipathic offending.


## Keywords

drug use, addiction, criminal behavior, violence, sadipathy, victimization

## 1. Introduction

We are currently seeing a rise in both drug use and criminal activity across the United States. There were more deaths from drug overdose last year than any year before. According to the Centers for Disease Control and Prevention (2022), there were approximately 107,622 deaths from overdose in the United States during the year 2021. Crime rates across the nation also increased during the same year. The nation's homicide rate has also been increasing over the last several years. There is clearly something taking place in the culture that is contributing to these ongoing social problems. Is there a direct connection between drug use/abuse and criminal behavior? Are people under the influence of alcohol or drugs more likely to commit crimes? Are people under the influence of alcohol of drugs
more likely to commit homicide? These are quite complicated questions due to how many different interacting variables are involved in these harmful behaviors. Simple cause-and-effect explanations are not really possible. For example, most people that use drugs will never murder anyone. But it seems evident that there is a connection between substance abuse and problems such as domestic violence, gang violence, and homicide.

There would also be value in looking further into any potential connection between alcohol and drug use/abuse and serial murder, specifically sadipaths. The sadipathic offender is the most brutal and cold-blooded type of criminal offender. It would make sense to investigate any potential link between sadipathic offending and the use/abuse of substances. Are sadipaths more likely to use substances prior to committing their depraved acts? Are sadipaths more likely to have addictions to substances? These types of inquiries obviously do not lend themselves to controlled designs, but researchers can still look for associations and supporting evidence.

This study has set forth the goal of finding out what members of the public believe about any potential connections between alcohol use/abuse and criminal behavior. The study has also probed into the public's views about addiction and criminal behavior. A focus was also given to use of substances, violent behavior, and homicide. In addition to these areas of interest, the study also places emphasis on finding out what the public believes about alcohol and drug use/abuse, addiction, and sadipathic offending. This study seeks to gain sharpened insight into what the public thinks about the interconnections between these ongoing social and behavioral problems.

## 2. Literature Review

The United States is currently dealing with a widespread drug epidemic. The nation has recently seen the highest death rates from drug overdose than ever before (CDC, 2022). The main cause of death is opioids, which are now responsible for over $70 \%$ of all fatal overdoses. Opioids kill over 136 Americans every single day (National Center for Drug Abuse Statistics, 2022). There are many explanations as to why this rise has occurred across the nation, but there does seem to be a clear connection between the recent national lockdown and the rise in substance use and criminal behavior. For example, in a study looking at the recent pandemic, substance use, and mental health, Berger (2021) found that $70 \%$ of respondents believed that alcohol use/abuse would worsen due to the pandemic. The study's findings also predicted that crime and domestic violence would get worse across the nation.
According to Berger (2021), strain and isolation due to the pandemic were viewed as being major contributors to increased substance use and mental health issues. Almost 8 out of 10 respondents believed that more people will be in need of professional mental health services. Gadd et al. (2019), found that alcohol and drug abuse are directly connected to domestic violence. The researchers noted that a person is significantly more likely to be abused if their partner is using drugs or drinking. They
also found that people are more likely to be abused if they themselves are using drugs or drinking. Core factors and traits associated with abusive behaviors were found to be impulsivity, low empathy, low self-regulation, and sensitivity. Core substances identified as being among the most closely associated with abusive behaviors were cocaine, alcohol, and heroin (Gadd et al., 2019). Stretesky (2009) found in his study that methamphetamine was also a core substance associated with violent behavior.
Homicide has been widely studied in relation to use of substances. Eriksson et al. (2020), found that acute situational intoxication and chronic substance misuse are both associated with homicide. In their study, the researchers conducted face-to-face interviews with 302 individuals convicted of murder or manslaughter and they determined that up to $50 \%$ of homicide offenders have a history of alcohol abuse and that up to $40 \%$ have a history of drug abuse. Chermack et al. (2012) noted that death by homicide is the 9th leading cause of death for adults between 18 to 65 years of age. These researchers found that there was a clear association between alcohol use disorder and drug use disorders and being the victim of homicide. Nearly $50 \%$ of all homicide victims had alcohol in their bloodstream at the time they were killed (Chermack et al., 2012).

Other studies have also found a clear relationship between psychoactive substances, violence, and homicide. Researchers have found that cocaine and methamphetamine are associated with acts of violence and homicide (de Bont et al., 2018). These researchers examined how effects on the frontal lobe and limbic system can contribute to a person committing extremely violent acts. Associations were also made to impulsiveness, systemic violence (e.g., drug distribution, transactional disputes), and economic-compulsive violence (e.g., committing crimes to obtain money for drugs; de Bont et al., 2018). Stretesky (2009) found that use of methamphetamine was the drug that was the most closely associated with homicide, even after adjusting for other drug use (e.g., alcohol, PCP, cocaine, heroin, crack, LSD). After controlling for numerous variables (e.g., race, age, sex, military experience, income, pervious arret), it was found that the odds of committing a homicide was 9 times greater for those that use methamphetamine.

Correlated variables that have been deemed to be relevant when it comes to understanding substance use, violence, and homicide include adverse childhood developmental experiences, financial difficulties, risk-seeking behavior, impulsivity, criminal histories, low self-regulation, criminal histories, and anger (Eriksson et al., 2020). It has been found that victims of violence are at increased risk of substance use and addiction. Fernandez-Artamendi et al. (2020) found in their research looking at youth that have been victimized, that there was a clear connection between their adverse experiences and poorer psychological adjustment and mental health disorders. The researchers disclosed that these individuals were more likely to engage in externalizing behaviors and to be at increased risk for alcohol and drug use disorders (e.g., marijuana). A clear association has been found to exist between substance abuse, violent behavior, and victimization (Chermack et al., 2012; Gadd et al., 2019).

There also appears to be a strong connection between alcohol and drug use and serial murder. According to Johnson and Becker (1997), serial murder consists of three or more kills occurring on separate occasions. These researchers identified several types of serial killers (e.g., crime spree killers, custodial poisoners, and sadistic serial killers). They noted that most serial killers have family histories of psychiatric problems and alcohol and drug abuse. Aggarwal et al., (2010) noted two classification types of serial killers, organized (e.g., planned, focused) and disorganized (e.g., not planned, extremely violent). He broke down serial killers further into hedonistic (e.g., kill for the joy of killing), instrumental (e.g., kill for money), control-oriented, and visionary (e.g., psychotic delusions). Certain personality disorders also appear to be associated with serial murder (e.g., antisocial). Berger (2020) found that $82 \%$ of study respondents believed that serial murder was connected to mental illness. Nearly $70 \%$ associated serial killing to anger, and $75 \%$ connected it to sadistic personality. Approximately 8 out 10 respondents stated that serial killers could not be rehabilitated, and most (62\%) believed that they should be put to death.

Most serial killers are males. The average age for serial killers is around 30. Sadistic serial killers enjoy the experience of power and control during the attack. There tends to be a leaning toward killing methods that are more "intimate", such as strangulation, stabbing, and beating the victims (Johnson \& Becker, 1997). Not all serial killers are males. It has been estimated that around 1 in 6 serial killers are females (Harrison et al., 2015). Most of these serial killers are educated, mothers, and White. They usually kill people that they know (e.g., children, aging parents, nursing patients) and tend to use different methods for killing (e.g., poisoning, staging accidents). Substance use and mental illness are relatively high in both male and female serial killers. Aggarwal et al. (2010) reported that up to 50\% of serial killers use alcohol, amphetamines, or marijuana before killing their victims. In their study, Harrison et al. (2015) found that nearly 1 in 4 female serial killers abused drugs and/or alcohol. Almost $40 \%$ of their sample of female serial killers has a severe mental illness (e.g., borderline, schizophrenia, antisocial, histrionic, bipolar).

Sadipathic offenders commit the most heinous types of acts. They enjoy torturing their victims. They completely lack empathy or compassion for their victims, and they actually take pleasure in their pain (Berger, 2019). Sadistic serial killers murder their victims for the joy of killing, and they often have family backgrounds consisting of alcohol and drug abuse and trauma (e.g., sexual and physical abuse). There is also often a sadistic sexual undertone for many male sadistic killers (Aggarwal et al., 2010). These findings are supported by Johnson and Becker (1997) that found that sexually sadistic serial killers have often previously experienced physical and/or sexual abuse. The majority of sadipaths are male. Female sadipathic offenders are less likely to rape or sexually mutilate their victims (Berger, 2019).

This study has set out to explore the perceived connections between alcohol and drug use/abuse,
criminal behaviors, and violence (e.g., homicide). Associations to addiction and criminal behavior will also be addressed. Special attention will be given to the connections between substance use/abuse and sadipathic offending. This work will help to draw together different, but related, ongoing cultural and interpersonal problems that are currently dilapidating the nation. This work should help academics and practitioners to better understand how these ongoing problems are interconnected in various and complex ways.

## 3. Methods

This study employed a cross-sectional design intended to capture the public's beliefs about the connections between drug use/abuse and criminal behavior. Focused attention was given to drug use/abuse and addiction with victimization, violence, and homicide. A specific focus was also placed on alcohol and drug use/abuse and addiction and sadipaths (serial killers). Data for the final sample were collected from 605 respondents via a quantitative survey instrument designed to allow for statistical analysis. Data for this study were gathered through various surveying approaches, including telephone, face-to-face, and Internet. No information for this study was collected from anyone under the legal age of consent. Consent was provided by the participants through their willingness to complete the survey. No compensation was provided for participation. The survey instrument took less than 5 minutes to complete. The survey instrument collected data on variables measured at both the discrete and scaled levels. Each of the 605 surveys included in the final analysis were deemed to have been filled out in an appropriate manner. Any surveys that contained multiple missing responses, or that appeared to have been filled out in a questionable manner, were promptly discarded. The data gathered in the final sample has been taken to provide both credible and useful information on the topic of interest.

In order to make sense of group differences, demographic information was collected across several variables. Out of the 605 study respondents, 318 were women, 266 were men, and 8 identified as "other." Thirteen respondents ( $2.1 \%$ invalid) did not answer this question. The respondents ranged in age from 18 to 76 . Eleven respondents did not answer this question ( $1.8 \%$ invalid). The sample was skewed toward younger respondents, with $70.2 \%$ of the valid responses coming from people between the ages of 18 to 29 . Respondents in their 30 's made up $13.3 \%$ of the final sample, with those in their 40 's ( $9.3 \%$ ), 50 's ( $4.4 \%$ ), 60 's ( $1.7 \%$ ), and 70 's ( $0.8 \%$ ) making up the remainder of the final sample. The majority of the respondents identified as Hispanic ( $n=349$, 58.9\%). There were 132 White respondents (22.3\%), with 56 Black respondents (9.4\%), 31 Asian respondents (5.2\%), 4 Middle Eastern ( $0.7 \%$ ), and 3 Native American (0.5\%). Eighteen respondents identified as "multi-racial or other" (3.0\%). Twelve respondents ( $2.0 \%$ invalid) did not answer this question. When asked about social class, the valid responses resulted in 273 stating that they were from the working-class (47.0\%),
with 227 (39.1\%) stating that they were from the middle-class, 65 (11.2\%) stating they were from the lower-class, and 16 (2.8\%) stating that they were from the upper-class. Twenty-four respondents ( $4.0 \%$ invalid) did not answer this question.
The items on the survey were closed-ended to allow for quantitative analysis of the collected data. All data were analyzed through the IBM SPSS (version 28) statistical software package. A range of statistical techniques were employed to assist with making sense of the collected data. Descriptive and inferential tests where run to better illuminate any useful findings. Inferential tests that were deemed valuable for this analysis included correlations (Pearson's), the median test, the binomial test, Hotelling's, Cronbach's, the t-test, and logistic regression. Reliability analysis was conducted to assist with making sense of the internal consistency of the scaled items. All tests of inference were set at an alpha level of .05 . Any finding that resulted in a probability greater than .05 was deemed to fall short of statistical significance. Effect sizes (e.g., Cohen's d, Hedges' correction) were also taken into consideration where appropriate to help make better sense of the practical findings beyond mere statistical significance.

## 4. Findings

Concerning the ten scaled items, the majority of respondents tended to lean more toward agreeing or strongly agreeing with the statements than they did toward disagreeing or strongly disagreeing with the statements. Excluding the neutral response of 3 on the scale items, this general leaning toward agreement can be seen in the following percentages. In response to the statement that drug use is associated with criminal behavior, $45.7 \%$ agreed ( $23.7 \%$ disagreed). On the item stating that people that abuse drugs are more likely to commit crimes, $60.7 \%$ agreed ( $15.5 \%$ disagreed). On the item stating that people that are addicted to drugs are more likely to commit crimes, $64.9 \%$ agreed $(13.8 \%$ disagreed). On the item stating that addiction to drugs is associated with violent behavior, $60.6 \%$ agreed ( $14.3 \%$ disagreed). On the item stating that alcohol use/abuse is associated with criminal behavior, 47.1\% agreed ( $22.5 \%$ disagreed). On the item stating that alcohol use/abuse is associated with violent behavior, $61.5 \%$ agreed ( $13.6 \%$ disagreed). On the item stating that serial killers are more likely to use/abuse drugs, $34.3 \%$ agreed ( $34.8 \%$ disagreed). On the item stating that serial killers are more likely to use/abuse alcohol, $36.7 \%$ agreed (35.1\%). On the item stating that people are the influence of drugs are more likely to victimize others, $56.6 \%$ agreed ( $14.5 \%$ disagreed). On the item stating that people under the influence of alcohol are more likely to victimize others, $60.8 \%$ agreed ( $12.8 \%$ disagreed).
The majority of respondents did not believe that homicide is associated with being under the influence of drugs (no $=63.6 \%$ ). The majority of respondents also did not believe that homicide is associated with being under the influence of alcohol (no $=64.0 \%$ ). On the statement that serial killers likely use alcohol or drugs before they kill their victims, $65.6 \%$ disagreed. A binomial test found this to be a
significant difference in proportions ( $\mathrm{p}<001$ ). Concerning the item stating that sadipaths are more likely to use/abuse alcohol or drugs, $52.4 \%$ disagreed. In response to the item stating that sadipaths are more likely to have an addiction to alcohol or drugs, $54.7 \%$ disagreed. A binomial test found this to be a significant difference in proportions ( $\mathrm{p}=.025$ ).
When comparing genders, women appear to believe that people under the influence of alcohol are more likely to victimize others, $t(582)=2.02$, sig. $=.043$, although the effect was weak ( $d=.17$ ). Concerning social class of the respondents, upper-class respondents were more likely to state that alcohol use/abuse and criminal behavior than those from the lower-class, $t(79)=-2.24$, sig. $=.028$, with a moderate effect size ( $d=-.62$ ). Upper-class respondents were also more likely to state that alcohol use/abuse is associated with criminal behavior than those from the working-class, $t(286)=-2.12$, sig. $=.035$, with a moderate effect ( $d=-.55$ ). Upper-class respondents were also more likely to believe that alcohol drug use/abuse is associated with criminal behavior than those from the middle-class, $t(240)=-2.28$, sig. $=.024$, with a moderate effect $(d=-.59)$.

Concerning ethnicity/race, there were a number of significant group differences detected across various scale items. On the item asking about alcohol use/abuse and criminal behavior: Hispanics were more likely to agree with this than those identifying as multi-racial, $t(364)=2.66$, sig. $=.008$, with a moderate corrected effect ( $g=.64$ ); Whites tend to agree more than multi-racial, $t(147)=2.97$, sig. $=.004$, with a strong corrected effect $(g=.74)$; Asian respondents tend to agree more than multi-racial, $t(47)=3.00$, sig. $=.004$, with a strong corrected effect $(g=.88)$. Significant group differences were also found on this item between Native Americans and Black and White respondents, but due to small sample size (Native Americans) these findings will not be reported due to lack of general confidence. On the item asking about drug use/abuse and people being more likely to commit crimes: Whites were more likely than Blacks to agree with this, $t(186)=3.15$, sig. $=.002$, with a moderate effect $(d=.50)$; Asians were more likely than Blacks to agree with this, $t(85)=-.2 .63$, sig. $=.010$, with a moderate effect ( $d=-.59$ ). Native Americans were also more likely to agree with this item statement than Black respondents, but due to a small size (Native Americans) the statistical findings will not be reported due to issues with confidence. On the item stating that people that are addicted to drugs are more likely to commit crimes, Whites were more likely than Blacks to agree with this, $t(185)=2.35$, sig. $=.020$, with a moderate effect ( $d=.38$ ).

Several notable group differences were detected on the item making the statement that addiction to drugs is associated with violent behavior. Hispanics were more likely to agree with this statement than Black respondents, $t(403)=2.30$, sig. $=.022$, with an effect size of .33 . Whites were more likely to agree with this than Blacks, $t(186)=2.44$, sig. $=.016$, with an effect size of .39 . Asian respondents were more likely agree with this statement than Black respondents, $t(85)=-2.29$, sig. $=.025$, with an moderate effect size ( $d=-.51$ ). Asian respondents were also more likely than Black respondents to
agree with the statement that serial killers were more likely to use/abuse drugs, $t(84)=-2.24$, sig, $=.028$, with a moderate effect $(d=-.50)$. Whites were more likely than Native Americans to agree with the statements that serial killers are more likely to use/abuse drugs and those serial killers are more likely to use/abuse alcohol.
There were several significant correlations across the items in the scale. The items looking at the respondent's beliefs about drug use and criminal behavior and drug abuse and likelihood of committing crimes was positively correlated ( $\mathrm{r}=.577, \mathrm{p}<.001$ ). The item stating that people being under the influence of drugs are more likely to victimize others and the item stating that people under the influence of alcohol are more likely to victimize others was positively correlated ( $\mathrm{r}=.667, \mathrm{p}<.001$ ). The item stating that serial killers were more likely to use/abuse drugs was correlated with the item stating that serial killers are more likely to use/abuse alcohol ( $\mathrm{r}=.772$, $\mathrm{p}<.001$ ). The item stating that people addicted to drugs are more likely to commit crimes was correlated with the item stating that addiction to drugs is associated with violent behavior ( $\mathrm{r}=.434, \mathrm{p}<.011$ ). The item stating that people addicted to drugs are more likely to commit crimes was also correlated with the item stating people that abuse alcohol are more likely to engage in criminal behavior ( $\mathrm{r}=.411$, $\mathrm{p}<.001$ ).
The item looking at addiction to drugs and criminal behavior was also correlated with the item looking at alcohol use/abuse and violent behavior ( $\mathrm{r}=.307, \mathrm{p}<.001$ ). The item stating that addiction to drugs was associated with violent behavior was correlated with the item stating that alcohol use/abuse was associated with criminal behavior ( $\mathrm{r}=.576$, $\mathrm{p}<.001$ ). The item declaring that addiction to drugs was associated with violent behavior was correlated with the item declaring that alcohol use/abuse was associated with violent behavior ( $\mathrm{r}=.543$, $\mathrm{p}<.001$ ). The statement that alcohol use/abuse was associated with criminal behavior was correlated with the statement that alcohol use/abuse was associated with violent behavior ( $\mathrm{r}=.627$, $\mathrm{p}<.001$ ).
The average mean score across the ten scaled items was 3.49, suggesting a slight leaning by the overall sample toward agreement with the item statements. The item with the highest mean came from the statement that addiction to drugs was associated with criminal behavior ( $\mathrm{m}=3.78$ ). The lowest average means came from the two scaled items asking about serial killers and using/abusing drugs ( $\mathrm{m}=3.02$ ) and using/abusing alcohol $(m=3.04)$. Reliability analysis demonstrated that there was a high level of internal consistency in the item responses. Cronbach's alpha revealed a strong internal consistency across the scaled items ( $\alpha=.848$ ). Cronbach's alpha never went below .824 with when any item was deleted, suggesting high internal consistency across the instrument. Hotelling's test produced a significant finding, resulting in a rejection that all of the means of the entered variables are equal $\left(\mathrm{T}^{2}=\right.$ 34.96, p < .001). The two scaled items addressing serial killers and drug use/abuse and alcohol use/abuse revealed a strong internal consistency ( $\alpha=.872$ ). This suggests that respondents draw a connection between serial killers and their use/abuse of drugs and alcohol.

Binary and multinomial logistic regression techniques revealed a series of significant findings concerning gender, social class, and ethnicity across several of the categorical items on the instrument. Respondents that identified as multi-racial were the least likely overall to believe that homicide was associated with being under the influence of alcohol, or that sadipaths were more likely to be addicted to alcohol or drugs. Table 1 provides a portion of some of the significant findings to help display this pattern. Asian respondents had odds of $14: 1$ to that of multi-racial respondents concerning the belief that homicide is associated with alcohol.

Table 1. Patterns Across Multi-Racial, Homicide, and Thoughts on Sadipathy

| Homicide-Alcohol | B | S.E. | Wald | df | Sig. | Exp(B) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Hispanic | 2.263 | 1.037 | 4.765 | 1 | .029 | 9.615 |
| White | 2.253 | 1.047 | 4.631 | 1 | .031 | 9.519 |
| Asian | 2.639 | 1.094 | 5.821 | 1 | .031 | 14.000 |
| Sadipathy-Addiction White | 1.323 | 0.599 | 4.874 | 1 | .027 | 3.754 |

Respondents that stated that sadipaths are more likely to use/abuse alcohol and drugs were much more likely to state that sadipaths were more likely to use alcohol or drugs before they kill their victims (OR $=17.792, \mathrm{p}<.001$ ). Respondents that believe that sadipaths are more likely to have an addiction to alcohol or drugs were significantly more likely to also believe that sadipaths use alcohol or drugs before they kill their victims ( $\mathrm{OR}=12.639, \mathrm{p}<.001$ ). When both of the above predictor variables are entered into the equation in a forward stepwise manner, they both remain significant when assessing respondent's beliefs about serial killers using alcohol or drugs before killing their victims ( $O R=5.679$, $\mathrm{P}<.001$; $\mathrm{OR}=3.911, \mathrm{p}<.011$, respectively). When social class is held constant, the odds of men stating that homicide is associated with being under the influence of alcohol is 1.503 that of women ( p $=.021$ )._Figure 1 shows the interconnections and relationships between gender and views on sadipaths. Overall, women were more likely to see a connection between sadipathy and use of substances. For example, $50.3 \%$ of women stated that sadipaths were more likely to use/abuse drugs or alcohol, compared to $44.4 \%$ of men. Although the majority of women do not believe that sadipaths use alcohol or drugs before killing their victims, 36.6 \% stated that they do use prior to killing (compared to $32.0 \%$ of men). Just under half of women and men stated that sadipaths are more likely to have an addiction to alcohol or drugs. The relationship map provides a visual representation of the connections across the variable nodes. Visual inspection shows a clear link between the "yes" responses and a clear link between the "no" responses. For example, the thickest nodes and link lines can be seen across the "no" responses, indicating that the respondents that did not see a connection between sadipathy and one item statement tended to not see a connection between sadipathy and the other item statements. The same
type of pattern in the nodes and link lines can be seen across the "yes" responses.


Figure 1. Gender on Substance Use/Abuse, Addiction, and Sadipathic Offending

## 5. Discussion

This study set out to explore how people perceive the connections between alcohol and drug use/abuse, addiction, and criminal behavior. The study also looked at the perceived connections between alcohol and drugs use/abuse, being under the influence, violence, and victimizing others. The study further assessed the perceived relationships between alcohol and drug use, addiction, and sadipathic offending (e.g., homicide). Overall, the findings of this research support the existing literature concerning the empirical evidence that alcohol and drugs are associated with criminal behavior (e.g., Chermack et al., 2011; Eriksson et al., 2020). The respondents in this study were more likely to state that alcohol and drug use/abuse was associated with violent behavior and the victimization of others. This is in line with the preexisting literature covering these related topics (de Bont et al., 2018; Gadd et al, 2019; Stretesky, 2009).

Numerous group differences were detected across the demographic variables and the responses to the items on the instrument. Women were more likely than men to state that serial murder is associated to alcohol and drug use prior to the violent act. Women were also more likely to believe that sadipathic offenders are more likely to use/abuse alcohol or drugs. They were also more likely than men to believe
that sadipaths have addictions to alcohol or drugs. This is in line with earlier findings on related topics. Sadistic murderers have generally been found to be more likely to have problems with substances and mental disorders (Aggarwal et al., 2010; Berger, 2020; Harrison et al, 2015). Upper-class respondents appear to be the most likely of any social class group to see connections between alcohol and drug use/abuse, addiction, and violent offending. Hispanic, White, and Asian respondents were among the most likely to believe that crime and violence was associated with alcohol and drugs. Native American respondents had the highest overall mean scores for most scaled items concerning alcohol and drugs use/abuse, addiction, violence and crime (e.g., drug use/abuse and crime, $\mathrm{m}=4.67$; alcohol use/abuse and crime, $m=4.00$ ).
Reliability analytic techniques demonstrated that the responses across the measures were consistent and replicable. The scaled items on the survey instrument demonstrated a high internal consistency ( $\alpha$ $=.848$ ). The items looking specifically at sadipathy resulted in Cronbach's alpha of .872 , suggesting a strong internal consistency. Logistic regression techniques also provided useful evidence for probabilistic differences across group. For example, Hispanic, White, and Asian respondents had odds significantly greater than other groups (e.g., multi-racial, Black) to believe that there were associations between alcohol and drug use/abuse, addiction, criminal behavior, and sadipathy. Overall, the general findings did lean toward the majority of respondents seeing certain connections between alcohol and drug/use, addiction, and criminal behavior. Associations were also generally produced concerning violent behavior and victimizing others. The findings on sadipathy were mixed across groups, and this may be due to a lack of knowledge about what constitutes this particular construct and sadipathic offending.
The study contained several notable limitations concerning the ability to conduct relevant statistical analyses across certain demographic groups. Future research could be enhanced by having larger sub-samples concerning gender and those that identify as something other than woman or man. Collecting more information from people between the ages of 60 to 90 would allow more valid analyses on older respondents. The only social class that could use larger numbers would be upper-class. From the data collected on upper-class respondents for this study, it appeared that upper-class individuals have some of the more differentiated beliefs concerning alcohol and drug use/abuse, addiction, violence, and criminal behavior. More data collected from Native Americans and Middle Eastern respondents would also aid analysis. Native Americans appeared to have some of the strongest beliefs when it came to the item statements, but the small sample size limited the analysis. It would also benefit the field to have more controlled studies on this topic, such as before-after designs seeing how responses may change after respondents are able to view related documentaries and court cases (e.g., serial killer cases).

The current study brought forth useful information for those interested in any area concerning alcohol
and drug use/abuse, addiction, and criminal offending. The study also produced useful information concerning beliefs surrounding substance use/abuse, violence, and homicide. Specific attention was also given to beliefs about sadipathic offenders. Data were collected providing insightful information on this extreme pathological group of offenders. The findings from this study should be of use to anyone interested in learning more about substance use/abuse, addiction, and criminal behaviors. The findings should also be valuable to those interested in furthering the development of our overall understanding of sadipathy and the sadipathic offender.

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