

**DISMANTLING THE “ABUSE EXCUSE:” PSYCHOLOGICAL INFLUENCES IN  
JUROR-DECISION MAKING FOR AN OFFENDER WITH ADVERSE CHILDHOOD  
EXPERIENCES**

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### Abstract

Victims of adverse childhood experiences (ACEs)—abuse, neglect and household dysfunction—are more susceptible to engaging in criminal behavior than are individuals without ACEs.

Almost all incarcerated people have at least one ACE, and a large proportion of those people have at least four ACEs. Given these numbers, are offenders with ACEs treated differently in the courtroom than offenders without ACEs? And, should they be? The current study aimed to explore the effect of expert testimony on people's attitudes toward and judgment of a defendant with a background of ACEs. Furthermore, the study examined the effect of a psychoeducational intervention on people's free will beliefs and subsequent perceptions of the hypothetical offender. Participants ( $N = 240$ ) were presented with a video on the biopsychosocial effects of trauma or a neutral video and then one of two vignettes about a man convicted of aggravated assault—one with and one without expert testimony about the offender's background of ACEs. Participants were then asked to respond to several statements regarding to what they would attribute blame for the offender's actions and how they believe the offender should be punished. Results indicated that the psychoeducational intervention was effective at reducing people's beliefs in free will, dispositional attributions, and support for retribution. Testimony of ACEs affected people's causal attributions only when they did not view the psychoeducational intervention. The findings have practical implications for potential defense strategies that attorneys can use when defending clients with ACEs. Educating jurors on both internal and external factors that influence behavior may assist attorneys in securing a more favorable outcome for their clients.

## **Dismantling the “Abuse Excuse:” Psychological Influences in Juror-Decision Making**

This case is an indictment of our justice system at every level. This woman is mentally ill. How could any court consider proceeding with her prosecution in the first place? Where were all the police and prosecutors when she was a child and teenager? How could her attempts to reach out have been ignored by the school system?

-Comment from reader Maureen Steffek on “Punch after Punch, Rape after Rape, a Murderer was Made”  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

In the early hours of January 13<sup>th</sup>, 2021, Lisa Montgomery became the first woman to be executed by the federal government since 1953 (Winter, 2021). Her crime, committed 17 years earlier, was chilling. On December 16<sup>th</sup>, 2004, Montgomery drove nearly three hours from her home in Melvern, Kansas to the home of 23-year-old, eight-month pregnant Bobbie Jo Stinnett in Skidmore, Missouri. Montgomery made her way into Stinnett’s home under the alias “Darlene Fischer,” a supposed dog-lover looking to buy a puppy from Stinnett’s dog-breeding business (Lussenhop, 2021). Just moments after entering the home, Montgomery attacked Stinnett, strangling her from behind and cutting her stomach open before removing and kidnapping the unborn baby. Soon after, Stinnett’s mother found her in a pool of blood and rushed her to the hospital. It was too late, however, and Stinnett was pronounced dead (Lussenhop, 2021).

The following day, Montgomery was arrested at her farmhouse in Kansas after trying to pass Stinnett’s baby girl off as her own. In October of 2007, she was tried and convicted for “kidnapping resulting in death.” The jury deliberated for less than five hours before finding her guilty, and Montgomery was sentenced to death. In the years following, a new legal team began to uncover details about Montgomery’s past that may have kept her from ever receiving the death penalty (Winter, 2021). A capital case has two distinct parts: the trial (guilt) phase and the sentencing (punishment) phase. Under guidelines from the American Bar Association, in regard to the sentencing phase, defense attorneys “must at minimum” work with a mitigation specialist,

an investigator responsible for delving into a defendant's background to uncover any facts that could help the jury humanize the defendant. Despite this, Montgomery's original attorney never consulted a mitigation specialist and the jury heard very little of Montgomery's past (Winter, 2021). Although her culpability was never in question, it is possible that her punishment could have been different if the defense attorney had provided context for her behavior on December 16<sup>th</sup>, 2004.

Just as brutal as Montgomery's actions that day was her extensive history of childhood trauma. Montgomery's mother, Judy Shaughnessy, drank throughout her pregnancy. Montgomery lived with her mother and stepfather, Jack Kleiner, for most of her life. According to Shaughnessy, Montgomery's first sentence was, "Don't spank me, it hurts." Outside of their home, Kleiner built a trailer with a separate entrance to Montgomery's room for him and his friends to rape her, often at the same time. From time to time, her mother forced her to pay the bills by offering her up to repairmen who worked on the house. When she was 18 years old, she married her stepbrother who, too, repeatedly raped and abused her (Winter, 2021). The years of trauma resulted in bipolar disorder, temporal lobe epilepsy, complex post-traumatic stress disorder, dissociative disorder, pseudocyesis, and traumatic brain injury. For eight years, Montgomery's new legal team fought to appeal her death sentence under the argument that the crime was a result of her prolonged abuse rather than her own free choice. They requested that she be given a life sentence instead. Despite their efforts, however, the Supreme Court ultimately allowed for her execution (Winter, 2021).

Although some of the public was in support of the Supreme Court's decision—one person even stating that they "can think of no better candidate for a state sponsored execution" (Snyder, 2020)—others attributed blame to the systems that allowed her to be repeatedly abused

in the first place without any intervention. Post-conviction, it was revealed that nearly 450 family members, neighbors, social workers, and teachers were aware of Montgomery's home life. In middle school, Montgomery was placed in special needs classes due to "deep emotional trauma," yet the school failed to alert anyone. When she was a teenager, she told her cousin, a deputy sheriff at the time, that Kleiner and his friends raped her, yet he never spoke up. When Montgomery's mother filed for divorce against Kleiner, she forced Montgomery to testify about the rapes in court. A social worker found the allegations credible and turned the file over to the County District Attorney's Office, where no one ever followed up (Snyder, 2020). Despite the number of people who knew of Montgomery's abuse, year after year she continued to be abused and raped without any intervention.

Potentially traumatic events that accumulate and interact during childhood are referred to as adverse childhood experiences (ACEs). Such experiences include physical, emotional, and sexual abuse; physical and emotional neglect; and household dysfunction, defined as exposure to mental illness, domestic violence, or substance abuse; parental separation or divorce; or having an incarcerated household member (Bellazaire, 2018). Lisa Montgomery, for example, scored a nine out of 10 on an adverse childhood experiences questionnaire, a score that coincides with the most extreme forms of torture. The original ACE study and others since suggest that ACEs operate in a graded dose-response, meaning that as the number of ACEs a child is exposed to increases, so does the risk for negative life outcomes (Baglivio et al., 2015a; Felitti et al., 1998; Fox et al., 2015; Napoli, 2019). Although the original ACE study (Felitti et al., 1998) focused on the impact of ACEs on subsequent physical health outcomes and premature mortality, the framework has since been used to understand differences in mental health, future victimization, and violence perpetration, among an exhaustive list of other life outcomes (Altintas & Bilici,

2018; Coates, 2010; Herrenkohl et al., 2016; Reavis et al., 2013). Whereas some scholars have accepted ACEs as a public health issue, and one that inherently impacts the criminal justice system, others take the “abuse excuse” stance, arguing that childhood history is irrelevant in sentencing and has no place in the courtroom.

The current study aims to fill gaps in the literature on public perceptions toward offenders who faced adverse childhood experiences. In particular, how does knowledge of an offender’s history of childhood adversity influence perceptions of blame and punishment recommendations, particularly in cases of crimes less severe than murder? Is testimony of childhood adversity mitigating, leading to more lenient sentences, or aggravating, leading to harsher sentences? And, how do people come to these conclusions? Given that free will beliefs drive people’s punishment decisions (Clark et al., 2014; Koppel et al., 2018; Lazar, 2019; Shariff et al., 2014), I propose that the manipulation of these beliefs will influence people’s judgments toward a defendant with a background of ACEs, increasing the likelihood that they will perceive evidence of ACEs as a mitigating factor. Furthermore, this is expected to occur through causal attributions, such that weakening people’s free will beliefs should increase their likelihood of attributing the offender’s behavior to situational characteristics and therefore their support for rehabilitation.

### **ACEs and Incarceration in the United States**

I would venture 100% of death-row inmates had a traumatic childhood and/or suffer from mental illness.

- Comment from reader Caroline on “Punch after Punch, Rape after Rape, a Murderer was Made”  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

Lisa Montgomery’s situation as someone who faced adverse childhood experiences and ended up in the criminal justice system is not an uncommon one. Adverse childhood experiences fuel both the juvenile justice system and the incarceration system. Beginning in their teenage years, victims of ACEs are disproportionately likely to engage in criminal behavior (Sill, 2020).

High ACE scores among youth are associated with an earlier age at first arrest, independent of individual, familial, and personal history risk factors such as impulsivity, parental supervision, and history of running away. Specifically, youth with more than five ACEs are 345% more likely to begin offending at an early age compared to youth with fewer than five ACEs (Baglivio et al., 2015b). Overall, these results suggest that youth who experience ACEs—especially those exposed to a higher number of ACEs—are more vulnerable to early onset and persistent styles of offending than are youth who do not experience ACEs.

Not only are ACEs more prevalent among justice system-involved youth (Baglivio et al., 2015a; Baglivio et al., 2015b), but exposure to adverse childhood experiences as a juvenile also lays the foundation for a longer criminal career. Among youth involved in the juvenile justice system, those with exposure to more adverse childhood experiences are more likely to reoffend compared to their counterparts with lower ACE scores (Baglivio et al., 2015a; Baglivio et al., 2015b; Fox et al., 2015). More specifically, juveniles with more ACEs are at a higher risk to engage in violent, serious, and chronic offending (Fox et al., 2015). In another study, juveniles with higher ACE scores were not only more likely to reoffend but reoffended in less time post-probation compared to youth with lower ACE scores (Wolff et al., 2015). Thus, combined, the research strongly suggests that cumulative exposure to ACEs is predictive of future offending among youth involved with the juvenile justice system.

Involvement in the juvenile justice system is also a predictor of involvement in the adult criminal justice system (Farrington, 1998, as cited in Napoli, 2019; Hamparian et al., 1985, as cited in Napoli, 2019). Specifically, Farrington (1998) found that among their sample of justice system-involved youth, 58% were later arrested in adulthood. Furthermore, ACEs on their own have been found to increase the likelihood of adult incarceration (Altintas & Bilici, 2018; Reavis



et al., 2013). As a result, victims of adverse childhood experiences are significantly disproportionately represented in the prison population—97% of incarcerated people have at least one ACE, and roughly 78% of those people have four or more ACEs (Compassion Prison Project, 2021). Overall, these statistics reflect wide disparities in who is represented in the incarcerated population, with the vast majority of the population having been exposed to at least one ACE in their childhood.

As with juveniles, adult offenders who experienced ACEs are at an increased risk for recidivism (Craig et al., 2017; Heirigs et al., 2020; Moore & Tatman, 2016). Craig and colleagues (2017), for example, found that ACE exposure and recidivism were positively correlated, such that an increase in ACEs predicted a higher risk of recidivism. Furthermore, the relationship between ACE exposure and risk of recidivism is robust against race and gender (Moore & Tatman, 2016). These results suggest that not only are victims of ACEs disproportionately represented in the United States' criminal justice system but also in the pool of people most likely to re-offend.

### **To Rehabilitate or to Punish?**

Imprisonment of the mentally ill is archaic and inhumane. Lisa Montgomery should be institutionalized but not in a prison, there are or should be better alternatives.

-Comment from reader Rick Spanier on “Punch after Punch, Rape after Rape, a Murderer was Made”  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

In the past 50 years, the number of people being held in jails and prisons in the United States has more than quadrupled, with the total number of people incarcerated reaching two million (Sawyer & Wagner, 2022). This overcrowding of prisons, combined with victims of ACEs' high susceptibility to engaging in criminal behavior and recidivating, has sparked public discourse regarding sentencing for offenders with ACEs. Rather than being locked up in prison, should they be diverted to mental health courts where they can be linked to services and supports

that might have prevented their behavior in the first place? Up until the mid-1970s, rehabilitation was the primary function of the criminal justice system. In fact, many defendants received sentences that required treatment for mental health problems (Benson, 2003). Prisoners were taught occupational skills to help them gain and retain employment following their sentence. Moreover, they were encouraged to resolve psychological issues, through programs such as anger management, that would further help their reintegration into society after their time in prison (Benson, 2003).

In the past several decades, however, rehabilitative ideals—based on the idea that prisons should serve as places where offenders are rehabilitated and made capable of returning to society as law-abiding members of the community (Garland, 2001, as cited in Phelps, 2011)—have taken a backseat to “getting tough on crime” policies. Among these policies include determinant sentencing, mandatory minimum sentencing, and the three-strikes law, requiring significantly harsher punishments for repeat offenders (Frost, 2006, as cited in Phelps, 2011). Thus, scholars argue that the country has taken a “dramatic rhetorical shift from the rehabilitative ideal to the punitive law-and-order era” (Phelps, 2011, p. 59). In other words, the values shaping the criminal justice system have moved from rehabilitative goals to retributive goals such as incapacitation and deterrence.

This shift toward a more punitive justice system has packed prisons and jails to the maximum and propelled the incarceration of the mentally ill. Indeed, about half of the prison population suffers from mental health issues (Collier, 2014). As a result, correctional facilities have become the country’s largest mental health care providers (Roth, 2018). However, prisons were not designed and are not equipped to successfully treat people with mental illnesses. Even when prisons *do* offer mental health treatment, these programs are often understaffed,

insufficient, and limited. And, without the necessary care, mentally ill inmates' conditions only decline and intensify. Incarceration itself is inherently harmful to people's mental health by removing people from their community, separating them from their families, and eliminating purpose from their lives (Quandt & Jones, 2021). Thus, imprisonment leads to a multitude of collateral consequences, triggering and worsening symptoms of mental illness. Furthermore, these effects have the potential to last long after someone is released.

Given the detrimental effects of incarceration on people's mental health, researchers have begun to examine how the shift toward a more punitive increase criminal justice system has impacted recidivism. Contrary to popular belief, there is little evidence to suggest that incarceration reduces repeat offending. Rather, some research suggests that incarceration has a criminogenic effect, increasing the likelihood of future criminal behavior (Cullen et al., 2011). In contrast, rehabilitative programs such as drug treatment, vocational training, and mental health and behavioral counseling, have been shown to be effective at reducing recidivism (MacKenzie, 2006, as cited in Miceli, 2009; Ring & Gill, 2017; Weatherburn et al., 2021). Therefore, moving back toward a system rooted in retributive ideals seems to be an important next step in reforming the criminal justice system, especially in regard to offenders who have a background of ACEs and are in need of mental health treatment.

## ACEs in the Courtroom: Two Competing Hypotheses

However much Lisa suffered from the horror inflicted on her, she had at all times a moral obligation—an obligation of self-restraint—to not inflict that horror on others. After all, there are many others equally traumatized who do not go out and commit the kind of monstrous act for which Lisa was convicted.

No one is suggesting that what she suffered excuses her guilt... She belongs in jail forever for her crime. The mitigating circumstances, however, clearly indicated that she should die of natural causes in jail, not be executed.

-Comments from readers Barry Schreiber and Robert Morris, respectively, on  
“Punch after Punch, Rape after Rape, a Murderer was Made”  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

People’s attitudes toward punishment are influenced by several personal factors as well as characteristics specific to the offender in question. Offender demographics, such as gender, age, and race/ethnicity, for example, have been found to account for differences in punitiveness. Across a number of empirical studies, women tend to receive more lenient and shorter sentences compared to men. Furthermore, old White defendants also tend to receive shorter sentences whereas young Black and Hispanic defendants tend to receive much harsher punishments (Demuth & Steffensmeier, 2004; Doerner & Demuth, 2010; Rodriguez et al., 2006). Although these demographic characteristics play a significant role in people’s level of punitiveness, information presented at trial, too, influences jurors’ decisions.

Expert witnesses, for example, have been found to sway jurors in their decision-making (e.g., Krauss & Sales, 2001; Schweitzer & Nunez, 2018). Expert witnesses are people with specialized knowledge in a particular field that may provide context or help a jury make sense of a given case (Ball, 2017). Relevant to the current study, attorneys defending clients with ACEs may hire expert witnesses to testify on how the offender’s prior abuse mitigates their culpability. This is sometimes referred to as the abuse defense, a criminal law tactic in which evidence of

prior abuse is introduced in order to argue that the defendant was incapable of controlling their impulses or distinguishing right from wrong at the time of the crime as a result of their exposure to prolonged abuse (Litton, 2005). The use of such evidence is largely a result of psychologists and other researchers explaining how childhood abuse can lead to emotional instability, impulsivity, and antisocial behavior, among other predictors of criminal behavior (e.g., Coates, 2010; Fox et al., 2015; Loeber et al., 2013). Nevertheless, some scholars believe that evidence of childhood abuse has no place in the courtroom because it allows criminals to abdicate personal responsibility and threatens democracy and order (Dershowitz, 1995, as cited in Napoli, 2019; Litton, 2005).

Given the controversial nature of the abuse defense in scholarly opinion, researchers have used mock jury trials to examine how expert testimony of an offender's background of abuse influences laypeople's punitiveness. From these studies have come two competing hypotheses; some research suggests that testimony of abuse is a mitigating (i.e., punishment-reducing) factor (Barnett et al., 2004; Barnett et al., 2007; Holleran et al., 2017; Kim et al., 2015; Menaker & Franklin, 2013; Napoli, 2019; Robbins & Litton, 2018) whereas other research suggests that testimony of abuse is an aggravating (i.e., punishment-enhancing) factor (e.g., Kim et al., 2015; Stevenson et al., 2010). Barnett and colleagues (2007), for example, found physical and sexual abuse to be the most mitigating circumstances in sentencing recommendations. When mock jurors were presented with evidence of an offender's childhood history of physical and sexual abuse, they chose a more lenient sentence compared to jurors who were not presented with any childhood history information. Similarly, Holleran and colleagues (2017) found that defendant histories lessened the probability of the hypothetical offender receiving the death penalty, with sexual abuse having the most significant effect.

Furthermore, the relationship between testimony of abuse and punishment can be explained by perceptions of moral responsibility, blame, and whether or not the behavior was reflective of an offender's "true self" (Menaker & Franklin, 2013; Robbins & Litton, 2018). For example, Robbins and Litton (2018) tested the effect of framing an offender's mental disorder as having a genetic versus environmental origin. When the mental disorder was described as being the result of the offender's childhood abuse, rather than a genetic origin, participants described the offender more positively. In particular, they assigned less blame and shorter sentences to the offender and were less likely to believe that the offender's behavior was a reflection of their true selfhood. Therefore, there is substantial evidence that evidence of childhood adversity can be a mitigating factor in the court room.

Findings from other studies, however, suggest that testimony of childhood abuse is an aggravating factor (Kim et al., 2015; Najdowski, 2015; Najdowski et al., 2009; Stevenson et al., 2010). When aspects of a defendant's history are used to display their disadvantage, people may perceive this defense as an excuse to get out of punishment, sometimes termed "the abuse excuse" (Dershowitz, 1995, as cited in Napoli, 2019). For example, some jurors have argued that because not all children with negative family histories commit horrifying crimes, the offender's behavior cannot be attributed to external forces such as childhood trauma (Logan, 1989, as cited in Barnett et al., 2004). Others argue that despite their history of abuse, the offender still had control over their behavior and therefore they should be held fully accountable for their actions (Stevenson et al., 2010). That is, they did not excuse the offender's crime by arguing that the effects of their abuse made them unable to control their criminal behavior. For example, one participant stated:

You can't blame that [the crime] on his [the offender's] childhood. He's an adult now. He knows what he's doing. He knows it's wrong. All of us had some outstanding

circumstances as a child. But there's a point where you stop crying over spilt milk. Maybe your dad was cruel to you, or maybe your mother made you work so hard. But how often can you use that as a rubber crutch. In other words, there's a point in your life when you have to get up on your own two feet and look straight ahead.

Finally, other jurors believe that a history of abuse is indicative of permanent damage and therefore a lack of potential for rehabilitation in an offender (Logan, 1989, as cited in Barnett et al., 2004). Thus, the literature suggests that childhood abuse testimony can also serve as an aggravating factor in the court room, as it is seen as either an excuse for the offender's behavior or an indicator of their lack of rehabilitative potential.

The mixed findings on the effect of the abuse defense among laypeople suggest that there may be individual differences in sentencing decisions when testimony of an offender's history of childhood abuse is presented in court. Therefore, understanding psychological influences in sentencing decisions may help explain why for some, testimony of childhood abuse is mitigating and for others, testimony of childhood abuse is aggravating. Although researchers have long been interested in studying psychological influences on punishment decisions, minimal research examines psychological influences in the context of the abuse defense—how do laypeople come to decisions about punishment when they are given evidence of an offender's background of childhood trauma? In the following sections, I propose two factors that may account for differences in sentencing recommendations for offenders with a history of ACEs: free will beliefs and causal attributions.

## The Presumption of Free Will in Criminal Liability

For all her trauma and brain damage, she managed to fool another woman into letting her into her home, to attack her until she died, and to extract a baby sufficiently adeptly to not kill it...She clearly had the wherewithal to plan and carry out a terrible murder and kidnapping. I'd be okay with her getting life in prison, but I'm also okay with her getting the death penalty. She was not psychotic or unable to control herself.

-Comment from reader Jennie on “Punch after Punch, Rape after Rape, a Murderer was Made”  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

Despite literature suggesting that human behavior is the result of an interaction between biological and environmental factors, rather than autonomy and choice (El Nokali et al., 2010; Goodnight et al., 2012; Gordon & Fondacaro, 2018; Shonkoff, 2012), our legal system is based on the assumption of free will—the theory that suggests that people hold the ability to choose between different courses of action independent of any restraints (Jones, 2003). In order for a person to be found guilty of a crime, two conditions must be met: *actus reus*—a wrongful act, which requires that the act is voluntary—and *mens rea*—a guilty mind, which requires that the individual is blameworthy (Fondacaro, 2011). Under societal norms, it would be wrong to punish someone who did not act out of their own free will or someone who is not blameworthy. Therefore, by assuming that people choose to break the law, the justification for “guilty” can easily be met. However, again, these presumptions reject any scientific explanation of human behavior. Instead, some scholars have argued that they provide the easiest basis for justifying punishment and allow courts to avoid the task of deciphering the complex causes of behavior (Jones, 2003).

In addition to the criminal justice system as a whole relying on the notion of free will, most people perceive others’ actions through the lens of free will. When deciding moral responsibility and punishment, what people want to know is “was it really *him* [the offender]? ... was it *him*, or was it his *upbringing*? Was it *him*, or was it his *genes*? Was it *him*, or was it his



*circumstances? Was it him, or was it his brain?*” (Greene & Cohen, 2004, p. 1778). In the case of Lisa Montgomery, was it her who killed Stinnett and kidnapped her baby, or was it her years of abuse? These questions inherently raise the question of free will—Did Montgomery have control over her behavior? Could she have acted differently?

Given that people tend to judge others’ actions under the assumption of free will, retributive justifications for punishment—grounded in a rationale based on the belief that offenders freely choose to commit crimes and therefore deserve blame for their behavior—tend to take priority over consequential justifications—grounded in a rationale based on achieving certain goals such as the rehabilitation of an offender (Carlsmith, 2008; Koppel et al., 2018). Specifically, free will beliefs have been found to influence three factors related to retributive justifications for punishment: people’s perceptions of intentionality, agency, and moral responsibility. Genschow and colleagues (2019), for example, found that believing in free will increases the perceived intentionality of another person’s behavior. The stronger a participant’s belief in free will, the more likely they were to believe that a person’s actions were committed intentionally. Similarly, belief in free will has been found to be linked to perceptions about moral responsibility. In their study, Nahmias and colleagues (2005) found that the stronger a participant’s belief in free will, the more likely they were to believe that people are responsible for their own behavior. The combination of these studies suggests that free will beliefs shape people’s judgments toward others’ behaviors.

Stronger free will beliefs also directly predict support for retribution, and research suggests that this relationship is mediated by blame (Koppel et al., 2018; Lazar, 2019; Shariff et al., 2014). For example, in one study (Shariff et al., 2014), the researchers attempted to weaken people’s free will beliefs by asking them to read neuroscientific articles on brain-imaging studies

that showed a dissociation between people's motor actions and their conscious intentions. Those who read the neuroscientific articles perceived the hypothetical offender as less blameworthy and therefore assigned significantly shorter prison sentences compared to those in a control condition. Similarly, Lazar (2019) found that inducing free will doubt in participants, through a psychoeducational intervention on the biopsychosocial effects of trauma, led to a decrease in general retributive beliefs via weaker beliefs that criminals are blameworthy for their actions. Therefore, the literature suggests that free will beliefs are strongly connected to people's sentencing decisions, such that stronger free will beliefs predict support for retribution due to increased levels of blame placed on offenders.

### **Free Will, Causal Attribution Theory & Punishment**

This article is a perfect example of how a marginalized person subjected to a lifetime of abuse can be failed by the school system, the child safety system, and the justice system. Now, that same justice system is working hard to become Ms. Montgomery's final abuser.

-Comment from reader Kiva-Marie Belt on "Punch after Punch, Rape after Rape, a Murderer was Made"  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

Given that free will beliefs shift people's perceptions of who or what is responsible for human behavior, they are inherently linked to the causal attribution theory. Heider (1958, as cited in O'Toole & Sahar, 2014) proposed causal attribution theory in order to address public perceptions of why a given phenomenon occurs. Specifically, causal attributions involve three dimensions: locus, stability, and controllability. Locus refers to whether the cause of an event is internal to an individual, such as their personality, or external to the individual, such as their socioeconomic status. Stability is used to denote whether the cause of an event is constant over time, such as a character trait, or varying over time, such as a spur-of-the-moment emotional response. Last, controllability pertains to whether the cause of an event is controllable, such as driven by a selfish motive, or uncontrollable, such as driven by a mental illness (Graham et al.,

1997, as cited in O'Toole & Sahar, 2014). Ultimately, these three dimensions contribute to a person's likelihood of making a situational or dispositional attribution toward behavior.

Empirical studies have demonstrated the link between free will beliefs and causal attributions, as they are both used to make sense of and explain human behavior. More specifically, the belief in free will predicts internal attributions for behavior, whereas the disbelief in free will predicts external attributions for behavior (Chandrashekar, 2020; Genschow et al., 2017). Genschow and colleagues (2017), for example, examined the relationship between the belief in free will and the correspondence bias, or the tendency to underestimate the impact of external forces and overestimate the impact of internal factors when judging people's behavior. They found a significant correlation between free will beliefs and causal attributions, such that a stronger belief in free will predicted more internal attributions toward behavior. Furthermore, Chandrashekar (2020) examined the relationship between free will beliefs and attribution of blame to people with obesity and people with mental illnesses. Their findings aligned with those of Genschow and colleagues (2017), such that those with stronger free will beliefs attributed more blame to obese people and people with mental illnesses compared to those with weaker free will beliefs. Therefore, the literature suggests that free will beliefs and causal attributions are strongly interrelated, such that the belief in free will corresponds to a higher likelihood of making dispositional attributions toward others' behaviors.

As with free will beliefs, causal attributions in and of themselves predict criminal punishment decisions. More specifically, internal attributions for crime are related to retributive goals of punishment, whereas external attributions for crime are related to rehabilitative goals of punishment (Cochran et al., 2006; O'Toole & Sahar, 2014; Templeton & Hartnagel, 2012). In one study, Cochran and colleagues (2006) examined individual differences in support for capital

punishment based on political affiliation and causal attributions. They found that political conservatives were much more in favor of the death penalty because they employed a distributional attribution style, holding offenders personally culpable and morally responsible for their actions. Conversely, liberals were much less in favor of capital punishment. They viewed criminal offenders as less culpable, less blameworthy, and less deserving of punishment, targeting social and economic forces that influence behavior. Furthermore, liberals reported believing that criminal offenders are in need of rehabilitation. Similarly, Templeton and Hartnagel (2012) found that people who made internal attributions about crime rated retributive goals of punishment as more important than rehabilitative goals, whereas people who made external attributions about crime did the opposite. Therefore, the literature suggests that causal attributions in and of themselves contribute to individual differences in punishment philosophies, with situational attributions of crime predicting support for rehabilitation and dispositional attributions of crime predicting support for retribution.

### **Individual Differences in Causal Attributions**

As a social worker who has a background in forensic social work and trauma... Even if only one of these repeated traumatic experiences was endured over the long term, it would be a major catalyst for any number of psychoses. I cannot believe what Ms. Montgomery endured and I find it even more appalling that none of the proper authorities followed through on serious allegations. Give this woman a fair chance for the remainder of her life.

-Comments from reader Amanda on "Punch after Punch, Rape after Rape, a Murderer was Made"

(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

Given that causal attributions play an important role in the courtroom, researchers have begun to examine individual differences to better understand people's sentencing decisions: Why do some employ situational attributions and others employ dispositional attributions? The theory of heterogenous attribution posits that the tendency to attribute responsibility to a person or their

situation depends on individual differences in knowledge about a given topic (Gomez & Wilson, 2006; O'Toole & Sahar, 2014; Purvis et al., 2002; Sargent, 2004). In their study, Gomez and Wilson (2006) found that a critical component of White people's attitudes toward Black people had to do with their level of knowledge about social inequality. People with higher political sophistication were more likely to make external attributions about Black people's social disadvantage, citing systemic obstacles. On the other hand, people with lower political sophistication were more likely to make internal attributions about Black people's social disadvantage, citing their failure to strive for success and their lack of effort.

Additionally, research has examined the theory of heterogeneous attribution on topics related specifically to the criminal justice system. O'Toole and Sahar (2014), for example, found that people with more prison system knowledge were more likely to support prison reform, make external attributions toward criminal behavior, and assign less blame to an offender than people with less prison system knowledge. Similarly, Purvis and their colleagues (2002) found that those especially knowledgeable about the criminal justice system made more informed punishment decisions and tended to support rehabilitation. This may be because they are more inclined to consider external factors that influence criminal behavior as well as better understand offenders' potential for rehabilitation. Therefore, the literature suggests that different levels of knowledge related to the prison system may be associated with attributions for crime and attitudes toward the purposes of punishment. Relating to the current study, it is possible that an educational intervention on the effects of childhood trauma would lead to disparities in attitudes toward an offender with a background of ACEs.

## Trauma Knowledge: A Biopsychosocial Intervention

I'm a doctoral level mental health professional with half-a-century of experience working with clients just like Ms. Montgomery... Complex or Developmental Trauma is abuse chronically inflicted upon a child by a primary caregiver... The more severe and frequent the abuse, the worse the damage will be. Children that come out of environments like Ms. Montgomery are nearly always severely damaged across a wide swatch of mental, emotional and social functioning.

-Comment from reader Sarah McStormy on "Punch after Punch, Rape after Rape, a Murderer was Made"  
(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

Experiencing trauma, particularly as a child, may involuntarily influence behavior through its negative and long-term effects on the neuroendocrine system, the main biological system involved in regulating stress. Specifically, prolonged activation of the stress response causes the body to be constantly flooded with stress-related chemicals such as cortisol. Although these chemicals are beneficial for short periods of time, overexposure can lead to destructive behavioral responses, such as extreme and violent reactions to non-threatening stimuli, which may predict criminal behavior (Coates, 2010; Fox et al., 2015; Loeber et al., 2013). Additionally, childhood trauma may involuntarily influence behavior through its negative effects on emotion regulation, interpersonal relationships, and psychopathology. Prolonged activation of the stress response, for example, can result in a persistent fear state that has been thought to be the foundation for future anxiety disorders as well as antisocial behavior (Child Information Gateway, 2015; Coates, 2010; Fox et al., 2015; Watters & Martin, 2021). Therefore, the literature suggests that childhood trauma can put an individual at a heightened risk for engaging in criminal behavior later in life due to repeated exposure to high stress situations.

Despite the extensive evidence suggesting that childhood trauma involuntarily influences behavior, some people still believe that behavior is a result of free choice and dispositional characteristics. Given that individual differences in knowledge have been found to predict causal attributions within a given domain (Gomez & Wilson, 2006; O'Toole & Sahar, 2014; Purvis et

al., 2002; Sargent, 2004), it is possible that disparities in trauma knowledge between laypeople explains differences in attributions of crime when testimony of childhood abuse is presented. Therefore, educating laypeople on the effects of childhood trauma may subsequently influence sentencing decisions when the offender has experienced ACEs. Although this has not been studied in the context of childhood trauma, researchers have explored different mechanisms to address laypeople's beliefs about people with mental illnesses. Given that childhood trauma and mental illness are inherently related, it's possible that the same mechanisms may apply to changing laypeople's attitudes toward people with childhood trauma.

Some researchers have taken a biomedical approach in changing attitudes and reducing stigma toward mental illness, promoting the idea that "mental illness is an illness like any other" (Corrigan, 2000; Longdon & Read, 2017; Read & Harre, 2001; Read et al., 2006; Walker & Read, 2002). Theoretically, the idea behind this approach is that if the cause of a mental disorder is attributed to factors outside of individual control, such as biological and/or genetic factors, then attitudes toward people with mental illnesses should be less negative. Conversely, if the cause of a mental disorder is attributed to a person's internal character, then people should have more stigmatized attitudes and desire more social distance between themselves and that person (Corrigan, 2000).

In reality, however, biomedical campaigns have not reduced stigmatized attitudes toward people with mental illness. Namely, this approach doesn't consider that biogenetic causal beliefs are associated with the belief that people with mental illnesses are dangerous, uncontrollable, and unpredictable (Corrigan, 2000; Longdon & Read, 2017; Read et al., 2006; Walker & Read, 2002). Longdon and Read (2017), for example, suggested that because the public tends to perceive mental disorders as difficult to treat, a biomedical framework supports the idea that

people with mental illnesses are unrecoverable and permanently “damaged.” Furthermore, biogenetic models place people with mental illnesses into a separate category characterized by fundamental biological and genetic abnormalities. This categorization encourages more stigma and a desire for social distance from people with mental illnesses (Longdon & Read, 2017; Read et al., 2006). Taken together, the literature suggests that biomedical models of mental illness actually increase stigma.

One major limitation of the biomedical framework, which may explain its ineffectiveness, is that it ignores any psychosocial factors involved in mental illness and encourages the use of dispositional attributions. Like a web of influences, biological, psychological, and social factors interact to produce the effects of childhood trauma (Lazar, 2019). Therefore, it is possible that a biopsychosocial framework may be more appropriate when it comes to conceptualizing victims of adverse childhood experiences and their outcomes. First proposed by George Engel in 1977, the biopsychosocial framework defies the notion of free will and describes outcomes as influenced by a combination of biological, psychological, and social characteristics. Engel (1977, as cited in Lazar, 2019) argued that in order to provide effective treatment for disease, medical practitioners must take into account the patient, the social environment in which they live, and their biological make-up. Since then, the biopsychosocial framework has been extended across many disciplines (Coates, 2010; Fondacaro, 2014; Lazar, 2019; Watters & Martin, 2021). In the context of criminal punishment, some researchers have suggested that we shift our perspective towards a biopsychosocial view of crime (Fondacaro, 2014).



## The Current Study

I feel for this woman, and I feel for her victim. This is tragedy all around, for all involved, and this situation shows how much reform is needed to protect children from (the long-lasting effects of) abuse, and reform to sentencing.

My greatest wish for this country is to raise awareness of how complex trauma impacts the hearts and minds of its survivors.

-Comments from readers Kelly and Krissy, respectively, on  
“Punch after Punch, Rape after Rape, a Murderer was Made”

(*New York Times* opinion piece, Snyder, Dec. 18, 2020)

The current study aims to fill gaps in the literature on public perceptions toward offenders who faced adverse childhood experiences. Whereas testimony of childhood trauma is a mitigating factor for some (e.g., Barnett et al., 2007; Holleran et al., 2013; Robbins & Litton, 2018), research suggests it to be aggravating for others (e.g., Kim et al., 2015; Stevenson et al., 2010). Given that incarceration perpetuates and worsens mental health symptoms (Quandt & Jones, 2021), which in turn increases the likelihood of future offending (Wallace & Wang, 2020), moving back toward a system focused on rehabilitative ideals, such as treating mental illnesses that have resulted from ACEs, is an important next step in reforming the criminal justice system. Doing so has implications for both the mental health crisis in our country as well as the overcrowding of prisons, as the vast majority of incarcerated people have ACEs.

In this study, I examined two specific psychological influences—free will beliefs and causal attributions—that are suggested to play a role in people’s sentencing decisions for an offender who experienced ACEs. Moreover, using a psychoeducational intervention on the biopsychosocial effects of childhood trauma, I attempted to manipulate people’s free will beliefs and causal attributions toward criminal behavior. In particular, I adopted an educational intervention based on the literature that suggests knowledge on a particular topic influences

causal attributions regarding a relevant domain (Gomez & Wilson, 2006; Sargent, 2004; O'Toole & Sahar, 2014). Furthermore, I used a biopsychosocial framework based on suggestions to include psychosocial factors in anti-stigma campaigns toward people with mental illness, a common consequence of adverse childhood experiences (Longdon & Read, 2017; Robbins & Litton, 2018). Given that the effects of adverse childhood experiences on criminal behavior can be explained using a biopsychosocial framework, it is possible that this may be the best approach in effectively manipulating people's causal attributions toward an offender's behavior.

Based on the literature, I tested five hypotheses. First, I predicted that learning the biopsychosocial effects of childhood trauma would decrease beliefs in free will and therefore increase the likelihood of situational attributions of crime. Second, I hypothesized that learning the biopsychosocial effects of childhood trauma would result in more support for rehabilitation and less support for retribution. Third, I hypothesized that causal attributions would mediate the effects of the psychoeducational intervention on support for punishment. Fourth, I predicted that the mere presence of childhood history testimony of abuse would result in more support for retribution and less support for rehabilitation. Finally, I predicted that there would be an interaction between the presence of childhood history testimony and the psychoeducational intervention, such that the effect of the childhood history testimony would depend on the viewing of the psychoeducational intervention. Participants who received childhood history testimony and watched the psychoeducational intervention were expected to indicate the greatest support for rehabilitation and least support for retribution.

## Method

### Participants

Two hundred forty participants were recruited through Amazon's Mechanical Turk to participate in an online study regarding "people's sentencing decisions in a case of aggravated assault." Data from 13 of the original 240 participants were removed from analysis due to their failure to provide an appropriate response to an attention check. Following their removal, the final sample size was 227 (121 men, 103 women, 1 non-binary, 2 prefer not to say) with participants ranging in age from 19 years old to 87 years old ( $M = 40.0$ ,  $SD = 11.58$ ).

Approximately 83% of participants identified as White/European-American, 7% Black/African American, 5% Asian/Asian-American, 3.5% Multiracial, 1% Prefer not to say, 0.5% American Indian or Alaska Native, and 0.5% Other. Participants' highest level of education ranged from completing less than a high school degree to completing a professional degree (JD, MD), with the largest proportion of participants (44.5%) having completed a bachelor's degree. Finally, participants' political orientation ranged from extremely conservative to extremely liberal, with a large proportion of participants (43.2%) falling within somewhat conservative to somewhat liberal. Participants were compensated with \$1.00 for completing the 15-minute survey.

### Design and Procedure

The current study used a 2 (Psychoeducational Intervention, Neutral Video) X 2 (Childhood Testimony, No Testimony) between-subjects design. Participants provided informed consent and were then asked to complete a questionnaire on their beliefs regarding the presence or absence of free will in people's decision-making. They were then randomly assigned to watch one of two videos: a psychoeducational intervention on the biopsychosocial effects of trauma or

a neutral video on the science behind baking cookies. All participants were then asked to complete the free will beliefs questionnaire again, taking into account any new information.

Participants then read a vignette that described the circumstances that led to an offender being tried for charges of aggravated assault. Approximately half of the participants were then presented with testimony from a forensic social worker about the offender's history of childhood abuse and the other half were not presented with any further information about the offender. Next, participants were asked to respond to a series of measures assessing their beliefs about the causes of the offender's behavior and how the offender should be punished. Finally, participants reported demographic information including their age, gender, race, highest level of education, and political orientation.

## **Materials and Measures**

### ***Anti-Free Will Manipulation***

Participants were asked to view a psychoeducational video lasting approximately four minutes in length that described ways in which exposure to trauma can involuntarily influence behavior. The intervention was designed and created by Lazar (2019), who found that people who watched the video reported weaker free will beliefs than those who did not watch it. More specifically, the intervention described the fight-flight-freeze mechanism, long-term activation of the HPA axis on behavior, and trauma's potential to affect emotion regulation, development, relationships, and psychopathology. The video deliberately did not mention the words free will, therefore leaving interpretation up to the participants. Furthermore, the narrator explained multiple threats to free will in order to visually and verbally display *how* science undermines free will, as per suggestions from past researchers. Following the video, participants completed an

attention check. Participants who did not pass the attention check were excluded from analysis. See Appendix A.

### ***Neutral Control***

Participants were asked to view an educational video lasting approximately four minutes in length which explained the science behind baking cookies. The video was of similar complexity to the manipulation video and the topic was unrelated to the variables in question. See Appendix B.

### ***Free Will Subscale***

Participants completed a shortened, seven-item version of the FAD-Plus Scale (FAD+; Paulhus & Carey, 2011;  $\alpha = .88$ ) before and after viewing their assigned video. This subscale has been used by several other researchers in place of the longer FAD+ scale (Koppel & Fondacaro, 2018; Lazar, 2019; Shariff et al., 2014). Participants indicated their level of agreement on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Sample items include: “People have complete control over the decisions they make” and “People can overcome any obstacles if they truly want to.” Higher scores indicate stronger free will beliefs, and no items are reverse-worded. In the current study, the internal consistency was high for both the pretest ( $\alpha = .92$ ) and the posttest ( $\alpha = .95$ ). See Appendix C.

### ***Crime Vignette***

Participants were presented with a vignette describing a crime of aggravated assault, committed by “Alex Bennett.” According to witnesses, Bennett approached another White man in Grand Central Station, beat him and fled the scene within a matter of minutes. Bennett’s location was identified soon after the incident and he was currently on trial. Aggravated assault, a moderately violent offense, was used in order to control for a potential floor effect that a non-

violent offense may produce or a ceiling effect that a severely violent offense may produce. See Appendix D.

### ***Childhood History Testimony***

Participants were presented with testimony from a forensic social worker about the offender's history of adverse childhood experiences, including parental separation, witnessing domestic violence in the home, and physical abuse. See Appendix E.

### ***Causal Attribution Scale***

Participants responded to 12 items regarding their beliefs toward the causes of the offender's behavior. Participants indicated their level of agreement on a 7-point Likert scale (1 = *Strongly disagree*, 7 = *Strongly agree*). Sample items include: "Alex's (the offender's) behavior is not a reflection of his true self" and "One of the main causes of Alex's behavior was likely a lack of self-control and discipline." Seven items were reverse worded but coded so that higher scores indicated situational attributions and lower scores indicated dispositional attributions. In the current study, the internal consistency was high (Cronbach's  $\alpha = .83$ ). See Appendix F.

### ***Punishment Justification***

Participants responded to eight statements regarding their beliefs toward the offender's punishment. Specifically, four items measured support for retributive goals and four items measured support for rehabilitative goals. Participants indicated their level of agreement on a 7-point Likert scale (1 = *Strongly disagree*, 7 = *Strongly agree*). Sample items include: "It's important for Alex (the offender) to be removed from the community" and "One goal of Alex's punishment should be to help him identify the reasons that led to his behavior in the first place." In the current study, the internal consistency was high for both the support for rehabilitation scale ( $\alpha = .82$ ) and the support for retribution scale ( $\alpha = .85$ ). See Appendix G.

### *Descriptive Measures*

Participants were asked to report their age, gender, race, highest level of education, and political orientation. See Appendix H.

### **Results**

Cronbach's alphas were computed for each scale and indicated high levels of internal reliability (all  $\alpha$ s  $\geq$  .82). Table 1 presents the means, standard deviations, and bivariate correlations among free will beliefs (pretest and posttest), causal attributions, support for rehabilitation, and support for retribution.

**Table 1**

*Correlations and Descriptive Statistics for Study Variables*

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>M</i>	<i>SD</i>
1. Original Free Will Beliefs	.92	--				5.15	1.23
2. Free Will Beliefs Posttest	.86**	.95	--			4.84	1.44
3. Causal Attributions	-.47**	-.58**	.83	--		3.32	0.78
4. Support for Rehabilitation	-.06	.14*	.29**	.82	--	5.68	0.94
5. Support for Retribution	.50**	.57**	-.56**	-.39**	.85	3.72	1.41

*Note.* All rating scales ranged from 1-7. Cronbach's  $\alpha$ s are presented along the diagonal.

\* $p < .05$ . \*\* $p < .001$ .

## Focal Analyses

### *Anti-Free Will Manipulation*

I predicted that viewing a video on the biopsychosocial effects of childhood trauma would weaken people's free will beliefs. First, an independent samples  $t$  test confirmed that participants' posttest free will beliefs differed as a function of their assigned video,  $t(225) = -4.44, p < .001$ , such that participants in the intervention condition reported weaker beliefs ( $M = 4.40, SD = 1.48$ ) than did participants in the neutral condition ( $M = 5.22, SD = 1.29$ ).

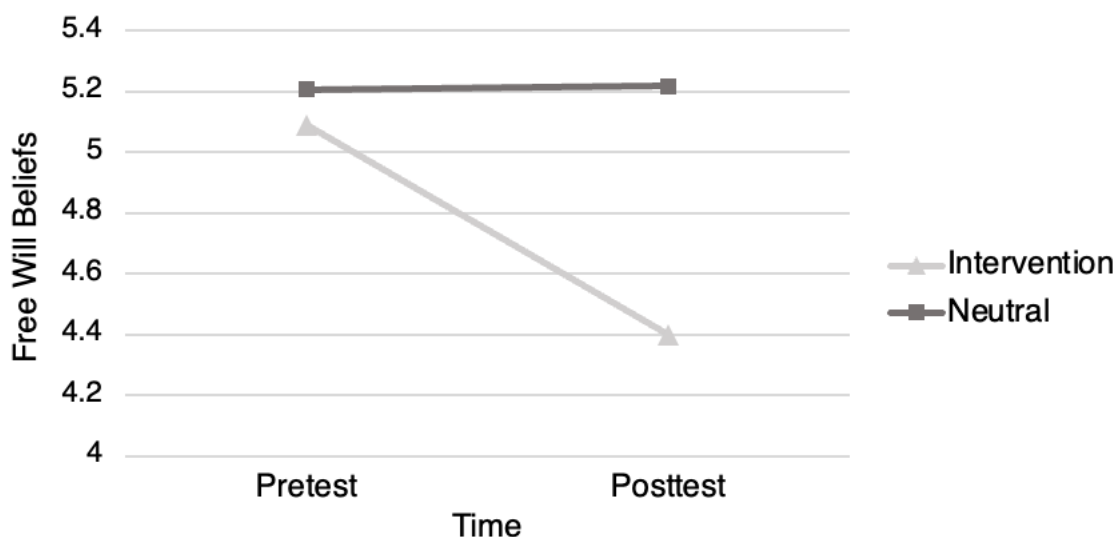
Next, a 2 (Video: Intervention, Neutral) X 2 (Free Will Beliefs: Pretest, Posttest) mixed-model factorial ANOVA was conducted in order to determine whether changes in free will beliefs from pretest to posttest differed by video condition. There was a significant main effect for video type,  $F(1,225) = 7.54, p = .007$ , partial  $\eta^2 = .03$ , with stronger free will beliefs for participants in the neutral condition ( $M = 5.21, SD = 1.23$ ) than for participants in the intervention condition ( $M = 4.74, SD = 1.41$ ). Furthermore, a significant main effect for free will beliefs test,  $F(1, 125) = 63.60, p < .001$ , partial  $\eta^2 = .22$ , indicated that there was a decline in free will belief scores from pretest ( $M = 5.15, SD = 1.25$ ) to posttest ( $M = 4.84, SD = 1.44$ ). Finally, there was a statistically significant interaction between video condition and free will beliefs test,  $F(1, 225) = 67.13, p < .001$ , partial  $\eta^2 = .23$ , suggesting that changes in free will beliefs from pretest to posttest differed by video condition. Two follow-up paired samples  $t$  tests indicated that there was a significant difference in free will beliefs for participants in the psychoeducational intervention condition,  $t(103) = 8.17, p < .001$ , such that their original free will beliefs were stronger ( $M = 5.09, SD = 1.33$ ) than their free will beliefs following the video ( $M = 4.40, SD = 1.48$ ). However, there was no significant difference in free will beliefs for participants in the neutral condition,  $t(122) = -.29, p = .780$ , indicating that their free will beliefs



remained similar from pretest to posttest. Therefore, as shown in Figure 1, the results suggest that the psychoeducational intervention was effective at weakening people's free will beliefs.

**Figure 1**

*Free Will Beliefs from Pretest to Posttest as a Function of Video Condition*



*Note.* Higher scores represent stronger free will beliefs.

### ***Causal Attributions***

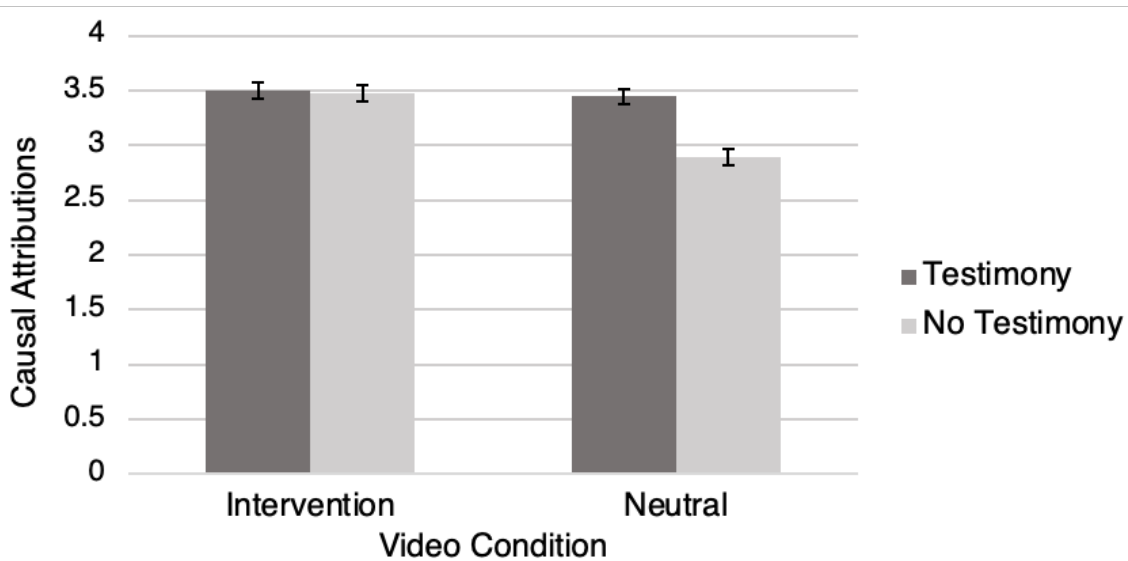
A 2 (Video: Intervention, Neutral) X 2 (Testimony: Present, Absent) ANOVA was conducted in order to examine the effect of video condition and presence or absence of testimony on participants' attributional tendencies. I predicted that there would be main effects for both the video and the presence of testimony, such that participants who viewed the intervention and received the testimony would be more likely to make situational attributions than those who viewed the neutral video and those who did not receive the testimony.

As expected, there was a statistically significant main effect of video condition,  $F(1, 223) = 10.24, p = .002, \eta^2 = .04$ , such that participants who viewed the psychoeducational intervention were less likely to make dispositional attributions ( $M = 3.49, SD = 0.76$ ) than were participants who viewed the neutral video ( $M = 3.18, SD = 0.78$ ). Also as expected, there was a statistically significant main effect of childhood testimony on participants' causal attributions,  $F(1, 223) = 8.52, p = .004, \eta^2 = .04$ , such that participants who were presented with childhood testimony were less likely to make dispositional attributions ( $M = 3.47, SD = 0.80$ ) than were participants who were not presented with any testimony ( $M = 3.17, SD = 0.74$ ).

Finally, there was a statistically significant interaction between video and testimony on participants' causal attributions,  $F(1, 223) = 7.11, p = .008, \eta^2 = .03$ , suggesting that the effect of the presence or absence of testimony was dependent on the video condition. Two follow-up independent samples  $t$  tests indicated that there was a significant difference in causal attributions for participants in the neutral condition,  $t(121) = 4.19, p < .001$ , such that participants who received testimony of the offender's ACEs were less likely to make dispositional attributions ( $M = 3.45, SD = 0.78$ ) than were participants who did not receive testimony of the offender's ACEs ( $M = 2.89, SD = 0.69$ ). However, there was no significant difference in causal attributions for participants in the intervention condition,  $t(102) = 0.17, p = .866$ . Participants who received testimony of the offender's ACEs reported similar causal attributions ( $M = 3.50, SD = 0.84$ ) to participants who did not receive testimony ( $M = 3.47, SD = 0.67$ ). Therefore, as shown in Figure 2, the results suggest that the effect of testimony was only present for participants who watched the neutral video.

**Figure 2**

*Causal Attributions as a Function of Video and Presence of Testimony*

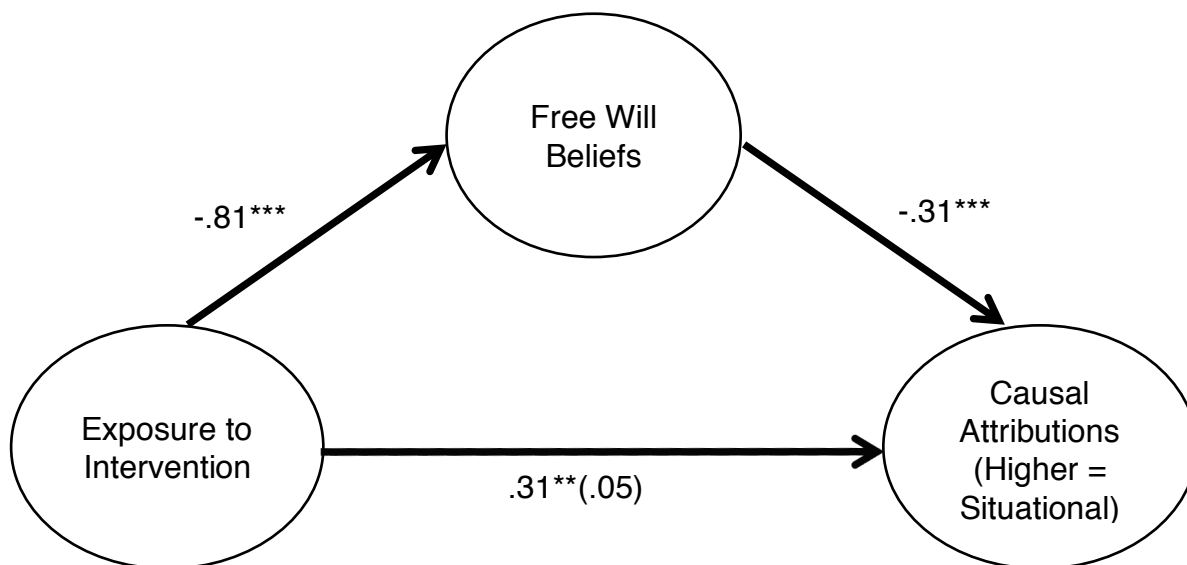


*Note.* Higher scores represent situational attributions; lower scores represent dispositional attributions. The error bars represent standard error.

From a simple mediation analysis conducted using Model 4 of the PROCESS (v. 4.0) macro for SPSS (Hayes, 2018), exposure to the psychoeducational intervention was indirectly related to causal attributions through its effect on free will beliefs. As illustrated in Figure 3, exposure to the intervention significantly predicted weaker free will beliefs ( $a = -.81, p < .001$ ), and weaker free will beliefs predicted situational attributions ( $b = -.31, p < .001$ ). In the model, 5,000 bootstrapped samples were drawn from the data. As predicted, the total indirect effect ( $ab = .31, p = .003$ ) was significant, with the 95% CI entirely above zero [.13, .39]. There was no evidence that exposure to the intervention was related to causal attributions independent of its effect on free will beliefs; in other words, the direct effect of the intervention on causal attributions was not significant ( $c' = .05, p = .54$ ).

**Figure 3**

*Mediational Model Predicting Causal Attributions from the Intervention and Free Will Beliefs*



*Note.* The figure presents unstandardized regression coefficients. The unstandardized regression coefficient for the relationship between exposure to the psychoeducational intervention and causal attributions, controlling for free will beliefs, is in parentheses.

$**p < .05$   $***p < .001$ .

### ***Support for Rehabilitation***

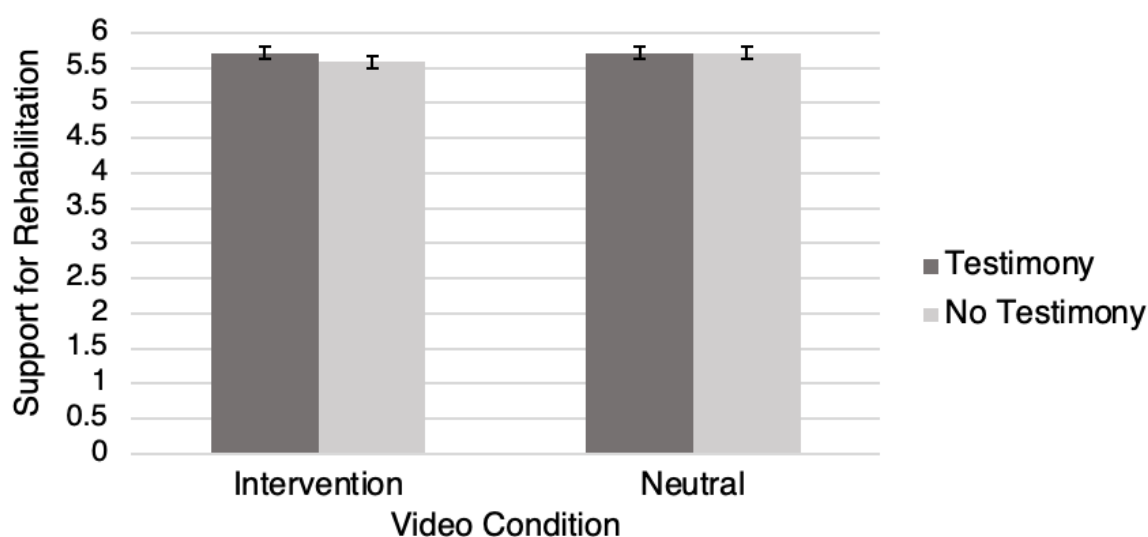
A 2 (Video: Intervention, Neutral) X 2 (Testimony: Present, Absent) ANOVA was conducted in order to examine the effect of video condition and presence or absence of testimony on participants' support for rehabilitation. I predicted that there would be main effects for both the video and the presence of testimony, such that participants who viewed the intervention and did not receive the testimony would indicate higher support for rehabilitation than those who watched the neutral video and those who did not receive the testimony.

Contrary to my hypothesis, results indicated that there was no significant main effect of video condition,  $F(1, 223) = 0.25, p = .620$ , or presence or absence of testimony,  $F(1, 223) =$

0.25,  $p = .620$ , on participants' support for rehabilitation. Furthermore, there was no significant interaction between video and testimony on participants' support for rehabilitation,  $F(1, 223) = .29, p = .590$ . As shown in Figure 4, participants' support for rehabilitation was high across all conditions.

**Figure 4**

*Support for Rehabilitation as a Function of Video and Presence of Testimony*



*Note.* Higher scores represent stronger support for rehabilitation. The error bars represent standard error.

### ***Support for Retribution***

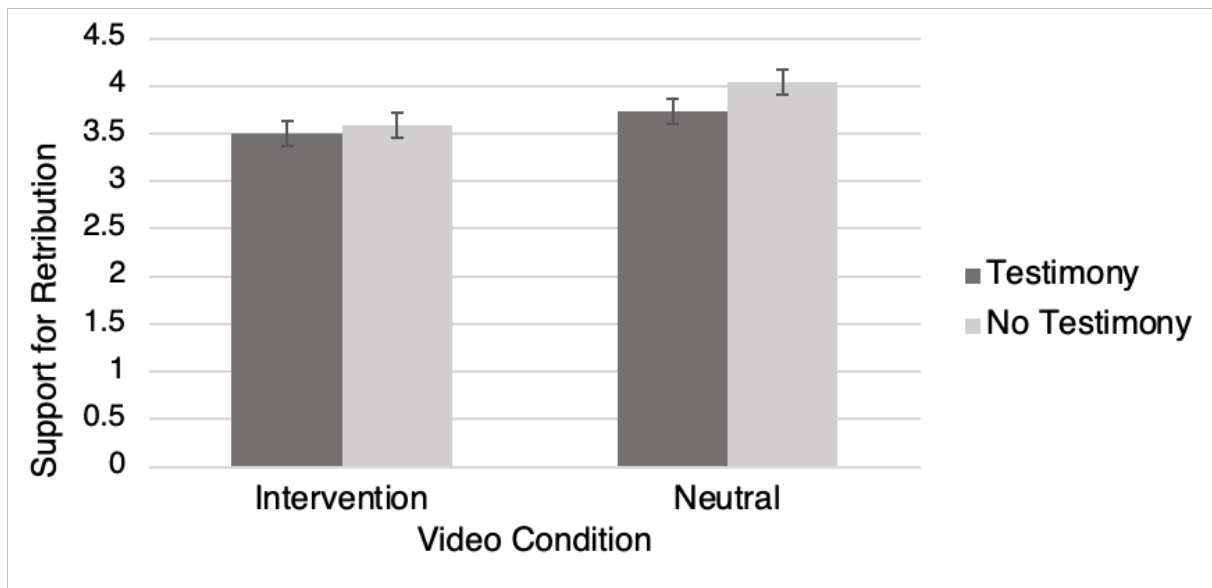
A 2 (Video: Intervention, Neutral) X 2 (Testimony: Present, Absent) ANOVA was conducted in order to examine the effect of video condition and presence or absence of testimony on participants' support for retribution. I predicted that there would be main effects for both the video and the presence of testimony, such that participants who viewed the intervention and

received the childhood testimony would indicate higher support for rehabilitation than those who watched the neutral video and those who did not receive the testimony.

Results indicated that there was a marginally significant main effect of the video condition on participants' support for retribution,  $F(1, 223) = 3.18, p = .080, \eta^2 = .01$ . As shown in Figure 5, participants who watched the psychoeducational intervention indicated somewhat lower support for retribution ( $M = 3.55, SD = 1.40$ ) than those who watched the neutral video ( $M = 3.87, SD = 1.40$ ). However, there was no significant main effect of the presence or absence of testimony on participants' support for retribution,  $F(1, 223) = 1.10, p = .30$ . Furthermore, there was no significant interaction between video and testimony on participants' support for retribution,  $F(1, 223) = .36, p = .550$ .

**Figure 5**

*Support for Retribution as a Function of Video and Presence of Testimony*

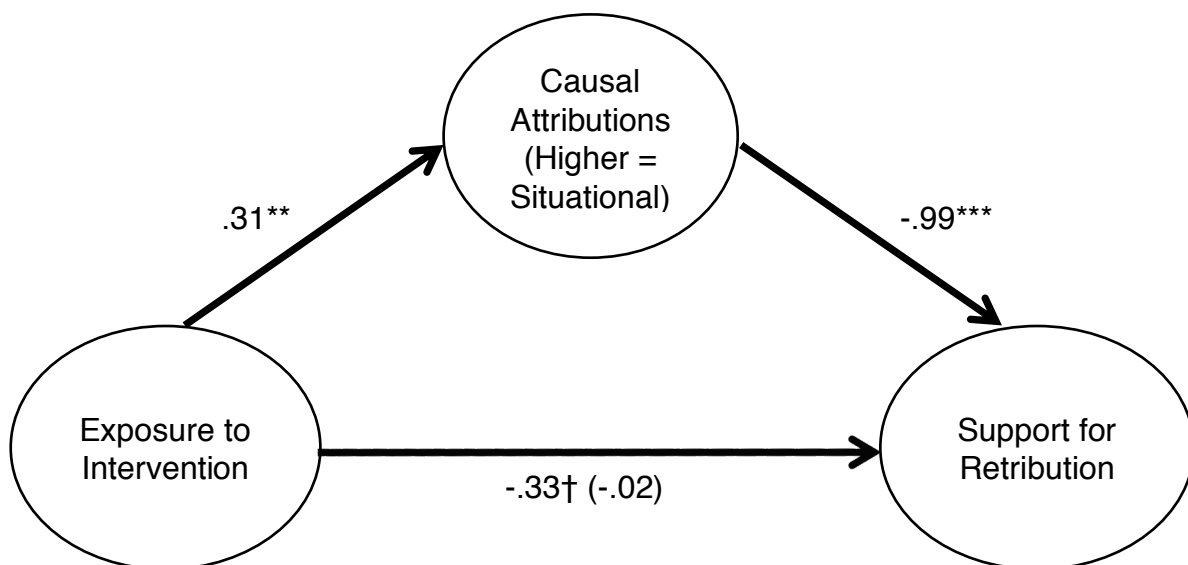


*Note.* Higher scores represent more support for retribution. The error bars represent standard error.

From a simple mediation analysis conducted using Model 4 of the PROCESS (v. 4.0) macro for SPSS (Hayes, 2018), exposure to the psychoeducational intervention was indirectly related to support for retribution through its effect on causal attributions. As illustrated in Figure 6, exposure to the intervention significantly predicted situational attributions ( $a = .31, p = .003$ ), and situational attributions predicted lower support for retribution ( $b = -.99, p < .001$ ). In the model, 5,000 bootstrapped samples were drawn from the data. As predicted, the total indirect effect ( $ab = -.33, p = .08$ ) was significant, with the 95% CI entirely below zero  $[-.50, -.11]$ . There was no evidence that exposure to the intervention was related to support for retribution independent of its effect on causal attributions; in other words, the direct effect of the intervention on support for retribution was not significant ( $c' = -.02, p = .90$ ).

**Figure 6**

*Mediational Model Predicting Support for Retribution from the Intervention and Attributions*



*Note.* The figure presents unstandardized regression coefficients. The unstandardized regression coefficient for the relationship between exposure to the psychoeducational intervention and causal attributions, controlling for free will beliefs, is in parentheses.

† $p < .10$  \*\* $p < .05$  \*\*\* $p < .001$ .

## Exploratory Analyses

### *Original Free Will Beliefs, Causal Attributions, and Support for Retribution*

From a simple mediation analysis conducted using Model 4 of the PROCESS (v. 4.0) macro for SPSS (Hayes, 2018), original free will beliefs were directly and indirectly related to support for retribution through their effect on causal attributions. As illustrated in Figure 7, stronger free will beliefs significantly predicted dispositional attributions ( $a = -.29, p < .001$ ), and dispositional attributions predicted higher support for retribution ( $b = -.74, p < .001$ ). In the model, 5,000 bootstrapped samples were drawn from the data. As predicted, the total indirect effect ( $ab = -.56, p < .001$ ) was significant, with the 95% CI entirely above zero [.14, .31]. Contrary to my hypothesis, there was evidence that original free will beliefs were also directly related to support for retribution; in other words, the direct effect of original free will beliefs on support for retribution was significant ( $c' = .34, p < .001$ ).

### *Examining Differences as a Function of Demographics*

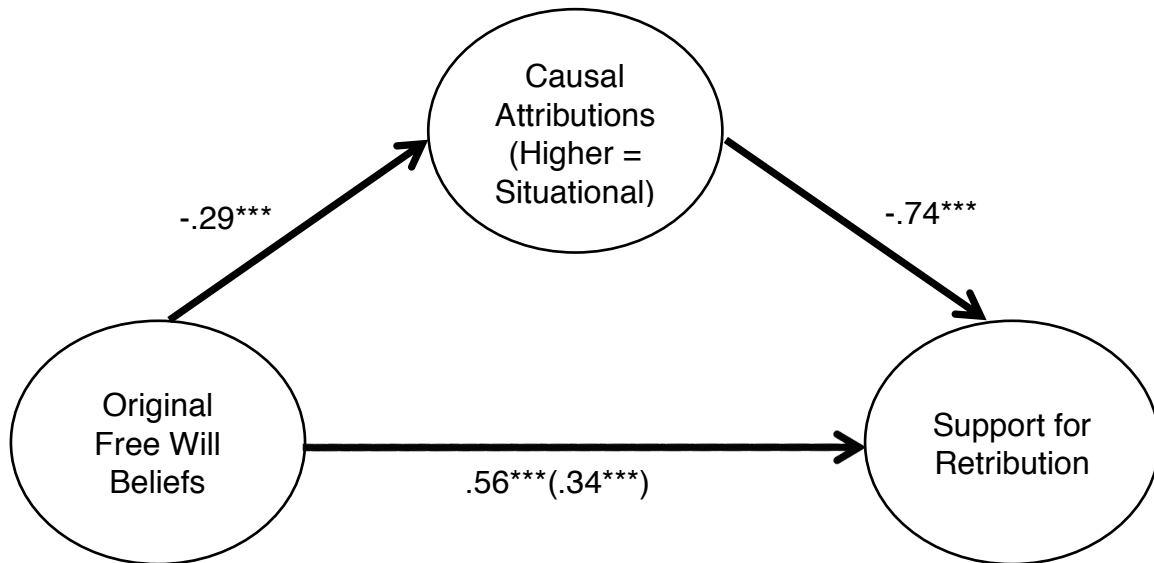
Four Pearson correlations were conducted to determine if participants' age influenced their free will beliefs, attributional tendencies, and punishment justifications. Results indicated that participant age was not significantly correlated with initial free will beliefs,  $r(225) = .01, p = .920$ , or attributional tendencies,  $r(225) = -.10, p = .140$ . Furthermore, there were no significant correlations between participant age and support for rehabilitation,  $r(225) = .00, p = .978$ , or support for retribution,  $r(225) = .05, p = .498$ .

Four independent samples  $t$  tests were conducted to determine if participants' free will beliefs, attributional tendencies, and punishment justifications varied as a function of their gender. Results indicated there was no significant difference in initial free will beliefs based on



**Figure 7**

*Mediational Model Predicting Support for Retribution from Free Will Beliefs and Attributions*



*Note.* The figure presents unstandardized regression coefficients. The unstandardized regression coefficient for the relationship between original free will beliefs and support for retribution, controlling for causal attributions, is in parentheses.

$***p < .001$ .

participant gender,  $t(222) = 1.09, p = .279$ . There was a marginally significant difference in causal attribution scores based on participant gender,  $t(222) = -1.86, p = .065$ , such that female participants were somewhat less likely to make dispositional attributions ( $M = 3.42, SD = 0.81$ ) than male participants ( $M = 3.23, SD = 0.76$ ). Similarly, there was a marginally significant difference in support for retribution based on participant gender,  $t(222) = 1.95, p = .053$ , such that female participants indicated less support for retribution ( $M = 3.55, SD = 1.38$ ) than male participants ( $M = 3.91, SD = 1.40$ ). Finally, there was a significant difference in support for rehabilitation based on participant gender,  $t(222) = -2.35, p = .020$ , such that female participants

indicated more support for rehabilitation ( $M = 5.84$ ,  $SD = 0.91$ ) than male participants ( $M = 5.55$ ,  $SD = 0.96$ ).

Four independent samples  $t$  tests were conducted to determine if participants' initial free will beliefs, attributional tendencies, and punishment justifications varied as a function of their level of education: college degree versus no college degree. Results indicated that there was no significant difference in initial free will beliefs based on level of education,  $t(222) = 1.33$ ,  $p = .186$ . Furthermore, there were no significant differences in causal attributions,  $t(222) = .76$ ,  $p = .448$ , support for rehabilitation,  $t(222) = -1.20$ ,  $p = .232$ , or support for retribution,  $t(222) = -.62$ ,  $p = .534$ , based on participant level of education.

Four Pearson correlations were conducted to determine if participants' political orientations influenced their initial free will beliefs, attributional tendencies, and punishment justifications. Results indicated that there were no significant correlations between political orientation and initial free will beliefs,  $r(225) = -.07$ ,  $p = .304$ , or attributional tendencies,  $r(225) = .09$ ,  $p = .202$ . Furthermore, there were no significant correlations between political orientation and support for rehabilitation,  $r(225) = .05$ ,  $p = .480$ , or support for retribution,  $r(225) = -.06$ ,  $p = .356$ .

## Discussion

### Overview and Explanation of Findings

In the current study, I explored the effects of free will beliefs on subsequent perceptions of and punishment decisions for a defendant convicted of aggravated assault. Furthermore, I aimed to understand if and how testimony of an offender's background of adverse childhood experiences influences people's causal attributions toward the offender's behavior as well as their punishment purposes. Taken together, the results provide strong evidence that free will

beliefs play a critical role in people's perceptions of and punishment decisions for criminal offenders. Furthermore, the results suggest that testimony of childhood adversity can be mitigating in the courtroom, shifting blame and moral responsibility away from a defendant with a background of ACEs.

### ***Free Will Beliefs***

Results indicated that people's original free will beliefs were significantly correlated with their attributional tendencies and support for retribution. Moreover, causal attributions mediated the relationship between original free will beliefs and support for retribution, such that participants who reported stronger free will beliefs were less likely to make situational attributions toward the hypothetical offender's behavior and therefore more likely to support retributive goals for punishment. These findings align with those of Chandrashekar (2020) and Genschow and colleagues (2017). In both studies, the researchers found that stronger free will beliefs predicted dispositional attributions for behavior, and weaker free will beliefs predicted situational attributions for behavior. Furthermore, the findings align with those of Cochran and colleagues (2006), O'Toole and Sahar (2014), and Templeton and Hartnagel (2012). In all three studies, the researchers found that people who employed dispositional attributions for criminal behavior indicated higher support for retributive punishment purposes, and those who employed situational attributions indicated higher support for rehabilitative punishment purposes. My results add support to the literature on free will beliefs, causal attributions, and punishment, indicating that free will beliefs impact fundamental cognitive processes involved in interpreting the cause of others' behavior.

Results also indicated that viewing the psychoeducational intervention on the biopsychosocial effects of trauma effectively weakened people's beliefs in free will. As

hypothesized, participants in the intervention condition reported weaker free will beliefs in the posttest compared to the pretest, whereas participants in the neutral condition reported similar free will beliefs from pretest to posttest. These findings align with those of Lazar (2019) and provide additional support that providing laypeople with information about the effects of trauma may make them consider both internal as well as external factors that influence behavior. The findings also provide further support for the use of a biopsychosocial framework when conceptualizing victims of adverse childhood experiences and their outcomes.

### ***Causal Attributions***

Results indicated that viewing the psychoeducational intervention effectively shifted people's causal attributions away from dispositional characteristics. As hypothesized, participants who watched the intervention were less likely to believe that the defendant's behavior reflected his true character or disposition than those who watched the neutral video. Moreover, this relationship was mediated by free will beliefs, such that participants who watched the intervention reported weaker free will beliefs which, in turn, predicted less dispositional attributions toward the offender's behavior. These findings align with those of Gomez and Wilson (2006) and O'Toole and Sahar (2014). In both studies, the researchers provided support for the theory of heterogeneous attribution, finding that people's level of knowledge predicted their attributions regarding a relevant topic. Furthermore, my findings add onto the literature on the theory of heterogeneous attribution, suggesting that free will beliefs may explain the relationship between knowledge and causal attributions as laid out by the theory.

Results also indicated that, among participants in the control condition, those who received testimony about the offender's history of childhood adversity were less likely to make dispositional attributions than were those who did not receive testimony. However, this effect

was not present in the intervention condition. These findings address a key point of controversy in the literature. Some research suggests that people make more controllable and stable attributions about offenders with a history of child abuse, arguing that their past does not make them unable to control their behavior (e.g., Stevenson et al., 2010). However, other research suggests that disclosure of victimization history reduces perceptions of personal blameworthiness, increasing people's likelihood of making situational attributions toward criminal behavior (e.g., Menaker & Franklin, 2013). My findings are in support of this pro-mitigating literature, as testimony of ACEs served as a mitigating factor in people's causal attributions for the offender's behavior. It is possible that this was only the case in the neutral condition because participants in the intervention condition had just watched a video about how many criminals have experienced childhood trauma. Therefore, in responding to statements about the defendant, they may have assumed that they were a victim of ACEs based on just having watched the video.

### ***Punishment Purposes***

As hypothesized, results indicated that people who watched the psychoeducational intervention endorsed less support for retributive purposes of punishment than those who watched the neutral video. These findings align with previous literature which suggests that manipulating free will beliefs influences people's attitudes toward retribution. Specifically, weakening people's beliefs in free will has been found to decrease their support for retribution (Lazar, 2019; Shariff et al., 2014). Furthermore, the effect of the intervention on support for retribution was mediated by causal attributions: people who watched the intervention were less likely to make dispositional attributions toward the offender's behavior and, in turn, express lower support for retribution. These findings also align with previous literature suggesting that

causal attributions directly predict criminal punishment decisions (Cochran et al., 2006; O'Toole & Sahar, 2014; Templeton & Hartnagel, 2012). Templeton and Hartnagel (2012), for example, found that individuals who adopt internal attributions for the causes of crime value retribution and incapacitation as the most important goals in sentencing. My study adds support for this relationship, further suggesting that retributive attitudes toward punishment are rooted in causal attributions.

Contrary to my hypothesis, results indicated that there was no effect of childhood testimony on people's support for rehabilitation or support for retribution. These findings neither confirm nor contradict previous literature, as some research suggests that testimony of childhood abuse is a mitigating, or punishment-reducing, factor in people's sentencing decisions (Barnett et al., 2004; Holleran et al., 2017; Menaker & Franklin, 2013; Napoli, 2019; Robbins & Litton, 2018) and other research suggests that testimony is an aggravating, or punishment-enhancing, factor (Logan, 1989, as cited in Barnett et al., 2004; Najdowski, 2015; Najdowski et al., 2009; Stevenson et al., 2010). It is possible that there have been studies that have found no effect of testimony of childhood abuse on people's punishment decisions but that these studies are not present in the literature because of a bias against publishing findings with null results.

### ***Demographics***

Contrary to previous literature, participant political orientation and level of education did not influence their causal attributions or punishment toward the hypothetical offender. Generally, people who identify as liberal tend to be more supportive of rehabilitation whereas people who identify as conservative tend to be more supportive of retribution. O'Hear and Wheelock (2016), for example, found that self-identified Republicans were significantly more punitive than self-identified Democrats and indicated significantly less support for rehabilitating criminal

offenders. Similarly, Sims and Johnston (2004) found that Democrats were more likely than Republicans to see rehabilitation as the most important goal of any punishment. In addition, a large proportion of the sampled Republicans chose incapacitation, or removing the criminal from society, as the most important goal of punishment. It is possible that my findings did not find differences in punishment decisions on the basis of political orientation because cultural norms in general, and across the political spectrum, are shifting in support for rehabilitation.

Furthermore, previous literature suggests that higher levels of education predict situational attributions toward criminal behavior and support for rehabilitation whereas lower levels of education predict dispositional attributions toward criminal behavior (O'Toole & Sahar, 2014; Purvis et al., 2002). However, these studies specifically examined participants' level of knowledge regarding the criminal justice system and my study more generally measured people's highest level of education. Therefore, it is possible that the education has to be specific to the relevant topic in order to influence people's causal attributions. This is in support of the theory of heterogenous attribution, which posits that the attribution of responsibility to a person or their situation depends on individual differences in knowledge about a relevant topic (Gomez & Wilson, 2006).

In support of previous literature, however, participant gender significantly influenced people's punishment goals in my study; women indicated higher support for rehabilitation and lower support for retribution compared to men. These findings align with past research such as those of Applegate and their colleagues (2002) and Sims and Johnston (2004). In both studies, gender contributed to individual differences in attitudes toward crime and punishment. More specifically, women expressed greater support for offender rehabilitation and less support for

punishment. Therefore, my results align with previous literature and further suggest that gender plays a significant role in courtroom decisions.

### **Implications**

The findings of this study may assist defense attorneys in several ways. Based on the results, attorneys should focus on how trauma impacts the brain at biological, psychological, and social levels in order to shift the jury's causal attributions toward situational factors and away from dispositional characteristics. Furthermore, attorneys should find relevant expert witnesses who can speak to trauma's impact on the brain and behavior. Specifically, expert witnesses should target people's beliefs in free will because free will beliefs were found to be predictive of causal attributions and punishment decisions. This may be even more important than any specific testimony of an offender's history of abuse, as the results indicated that the educational intervention had more of a significant effect on people's causal attributions and punishment rationales than the presence or absence of childhood testimony.

Second, the results of the study could be informative in the jury selection process, or voir dire. For example, knowing that women are more likely to make situational attributions toward an offender's behavior, show high support for rehabilitation, and show low support for retribution can help defense attorneys when they are considering whom to strike in the jury selection process so as to better achieve their desired verdict. Furthermore, attorneys may want to gauge potential jurors' beliefs in free will, specifically how they attribute the causes of behavior. In doing so, they may be able to better predict which potential jurors would be most and least likely to consider any external factors that could have influenced their client's behavior when at the time the crime was committed.



Finally, participants' overall high support for rehabilitation for the criminal justice system across all conditions is encouraging. This finding suggests that public opinion may already be shifting back toward a correctional philosophy rooted in rehabilitative efforts. Although only a small and diminishing proportion of legal cases actually go to trial (5-10%), thousands of cases are still decided by juries each year (Bornstein & Greene, 2011). Therefore, jurors play a crucial role in the United States' criminal justice system and policies regarding mandatory minimum sentences and determinant sentencing should be revisited in order to better align with public ideals. Furthermore, increasing and improving access to mental health services could alleviate some of the pressure on the system as a whole as well as reduce the overcrowding of prisons.

### **Limitations**

Despite these implications, there are some limitations to consider. First, the sample was highly homogenous in regard to race, with a large majority of participants being White. Furthermore, the offender in the crime vignette was White. This introduces the possibility of the similarity-leniency effect, which is when jurors of one race are more lenient when judging a defendant of the same race, and harsher when judging a defendant of a different race (Jay et al., 2021). The similarity-leniency effect has been demonstrated in a number of empirical studies (Jay et al., 2021; Schiller et al., 2014). Furthermore, Jay and their colleagues (2021) found that this relationship was mediated by causal attributions. Assuming that the similarity-leniency effect can be explained by causal attributions, thus, it is possible that the majority of participants being White and the offender being White in my study, at least in part, explains people's tendency to make situational attributions toward the offender's behavior, high support for rehabilitation, and lower support for retribution. This limits the overall generalizability of the findings and future research should examine the effects of the psychoeducational intervention

and testimony of ACEs on interracial cases (Black juror-White defendant or White juror-Black defendant).

Second, many factors, other than those accounted for, play a role in people's causal attributions. As mentioned in the introduction, the theory of heterogeneous attribution suggests that individual differences in causal attributions may be explained by differences in knowledge about a relevant domain (e.g., Gomez & Wilson, 2006). Therefore, it is possible that participants' occupations or general knowledge of the criminal justice system may have influenced their causal attributions and/or subsequent punishment decisions in my study. Future research testing the effect of the psychoeducational intervention on people's causal attributions should account for these factors in order to increase the internal validity of the findings.

An additional limitation regarding the internal validity of the study is that, presumably, a video about baking cookies could have put participants in the control condition in a positive mood. Likewise, a video about childhood trauma could have put participants in the intervention condition in a negative mood. Previous research suggests that emotions are strongly related to attributions for criminal behavior and attitudes toward the criminal justice system. Experiencing anger, for example, enhances dispositional attributions and preferences for retributive over rehabilitative policies (Cassese & Weber, 2011). In my study, therefore, it is possible that the videos had unintended effects on people's moods that subsequently influenced their causal attributions and attitudes toward punishment. Future researchers should control for mood by comparing the effects of the trauma intervention against the effects of another negatively-valenced video. By doing so we can increase the internal validity of the study, or the extent to which we are able to attribute differences in causal attributions to the intervention rather than differing moods.

Finally, the simulation design of the study limits the external validity of the findings. Participants in this study differed from jurors in an actual trial in several ways, including the environment (online vs. in a courtroom), the consequentiality of the task (making a hypothetical vs. real decision), setting (individual vs. group deliberation), and the trial medium and length (brief written summaries vs. combination of written and oral information). Previous literature suggests that the consequentiality, or lack thereof, of mock jury simulations, for example, impacts people's perceptions and decisions (Breau & Brooke, 2007). Furthermore, being in an actual courtroom can induce stress in jurors, and stress has been found to influence people's causal attributions toward defendants. More specifically, increased levels of stress predict more dispositional attributions and negative evaluations of criminal behaviors (Kubota et al., 2014). Therefore, the discrepancies between my simulation and jurors in an actual trial limit the ability to infer that the findings of my study would apply in a real courtroom setting. Future research should better mirror the conditions of real trials in order to increase the external validity of the results.

### **Future Directions**

Other than addressing the limitations of the study, these findings propose several avenues for future research regarding people's sentencing decisions for offenders with a history of adverse childhood experiences. First, the childhood testimony included only three of the ten experiences in the ACE framework: physical abuse, exposure to domestic violence, and an incarcerated family member. Previous literature suggests that some ACEs, such as sexual abuse, are perceived as more harmful than others, such as parental divorce (Napoli, 2019). Therefore, it is possible that people's decisions would vary depending on the specific type of ACE the given offender experienced. Furthermore, there are several types of adverse childhood experiences—

other than abuse, neglect, and household dysfunction as represented in the ACE framework—that can lead people to becoming more susceptible to engaging in criminal behavior and ending up incarcerated. Growing up in poverty, for example, has been found to increase the risk of drug related (Manhica et al., 2020) and violent crime convictions (Mok et al., 2018). Therefore, future research should consider these other types of adverse childhood experiences outside of the typical ACE framework in order to expand our concept of childhood adversity and its role in the criminal justice system.

Second, future research should replicate this experiment with people who express particularly high support for retribution and low support for rehabilitation. Participants in the current sample were generally very supportive of rehabilitation regardless of their condition. Therefore, it's possible that there were no significant differences in support for rehabilitation between groups due to a ceiling effect. Given that the purpose of the study, and specifically the psychoeducational intervention, was to shift people's punishment attitudes, it would be important for future research to measure people's attitudes toward punishment both before and after viewing the intervention. By doing so we can examine if the intervention can change people's attitudes who express strong support for retribution and low support for rehabilitation.

Finally, future research should continue to examine the impact of educational interventions on juror-decision making. In the current study, I only tested one framework—biopsychosocial—for conceptualizing victims of adverse childhood experiences. Testing other educational models can help to more clearly tease out the type of information that is important when educating jurors on how an individual's environment may make them more vulnerable to engaging in criminal behavior later in life. Given that previous research suggests biomedical frameworks increase stigma toward people with mental illnesses (e.g., Read et al., 2006), it is

possible that a psychosocial model on the effects of ACEs would be more effective in shifting jurors' attributions for criminal behavior toward situational characteristics. Therefore, future research should continue to test various frameworks for conceptualizing victims of adverse childhood experiences in the courtroom.

## **Conclusion**

Beginning in their teenage years, victims of adverse childhood experiences are significantly more susceptible to engaging, and re-engaging, in criminal behavior. As a result, they fuel both the juvenile justice system and the incarceration system. The current study aimed to understand how we can change this problem, specifically by attempting to shift people's attitudes on the purpose of the criminal justice system toward rehabilitative ideals and away from retributive, punitive philosophies. The findings suggest that public opinion may already be shifting back toward a more correctional basis, as participants across all conditions reported high support for rehabilitation. Furthermore, the psychoeducational intervention effectively decreased people's dispositional attributions toward the offender's behavior as well as their support for retribution. These results have implications for attorneys preparing defense strategies for clients with ACEs and mental health professionals preparing expert testimony for trial. Expert witnesses should target people's beliefs in free will as well as testify to the impact of childhood trauma on behavior in order to secure a more favorable outcome for defendants with a background of ACEs.

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## Appendix A

### FAD-Plus Questionnaire (shortened version)

For the following, choose a number from 1 (strongly disagree) to 7 (strongly agree) to indicate how much you agree or disagree with the statement.

1. People have complete control over the decisions they make.
2. People must take full responsibility for any bad choices they make.
3. People can overcome any obstacles if they truly want to.
4. Criminals are completely responsible for the bad things they do.
5. People have complete free will.
6. People are always at fault for their bad behavior.
7. Strength of mind can always overcome the body's desires.

\*Higher scores indicate stronger free will beliefs

## Appendix B

### Psychoeducational Intervention

Video link: [https://www.youtube.com/watch?v=K\\_nVrNaNHxY](https://www.youtube.com/watch?v=K_nVrNaNHxY)

Transcript:

Many people who commit crimes have experienced childhood trauma. In fact, the proportion of people in jails and prisons who have been victims of childhood trauma compared to the general population is disproportionately high! Some of the most common traumas that people in prison experienced during childhood are seeing or hearing someone get badly hurt or killed, being threatened with a weapon, experiencing family violence or divorce, having a family member who was incarcerated.

Can these traumas influence behavior? If so, how? To answer this question, it is helpful to look at what is called the biopsychosocial model of trauma. Research has shown that experiencing trauma can affect people at the biological, the psychological, and the social levels. The combination of these effects can then influence behavior in a very strong way. Let's look at how this works in action.

Let's start by looking at how trauma can influence the brain. The human brain is programmed to assist us when we are exposed to danger. The hypothalamic pituitary adrenal axis (or HPA axis for short) is our central stress response system. When confronted by a threat, an alarm bell goes off in our brain, triggering the HPA axis to release hormones, adrenaline, and cortisol—preparing us for immediate action. Our hearts pump faster, our breathing quickens, our muscles tighten, and we start to sweat. In this hyper-aroused state, we can choose to fight, to flee, or to freeze. Once danger has subsided, a negative feedback system in our brains allows our body to return to a non-aroused state, and we calm down.

However, in cases of prolonged exposure to childhood trauma, children often perceive constant danger and as a result, their negative feedback system can become dysregulated. The system can become jammed- causing their bodies to become flooded with hormones and their nervous systems to remain on high alert, constantly anticipating danger even when none is there! This can help explain why some individuals who were abused as children can have extreme and even violent reactions non-threatening and even trivial stimuli. This is a concrete way that trauma affects biology which in turn can affect behavior.

What about ways trauma can affect the psychology and social world of an individual? One prominent example is emotion regulation— one's ability to regulate their own emotions and read the emotions of others. Individuals who were abused often have a harder time recognizing, expressing, or understanding emotion. This may make them more likely to detect aggression in others and exhibit more aggression themselves. Researchers have also found that development of self, psychopathology, attachment, and peer relationships can all be negatively affected by childhood trauma- ultimately having the ability to affect behavior.

Overall, childhood trauma can affect people at the biological, psychological, and social levels. This in turn can influence behavior. Like a puppet's strings, these factors can be thought of as processes outside of one's control and awareness that can have influence over their behavior.

## Appendix C

### Neutral Video

Video link: <https://ed.ted.com/lessons/the-chemistry-of-cookies-stephanie-warren>

Transcript:

In a time-lapse video, it looks like a monster coming alive. For a moment, it sits there innocuously. Then, ripples move across its surface. It bulges outwards, bursting with weird boils. It triples in volume. Its color darkens ominously, and its surface hardens into an alien topography of peaks and craters. Then, the kitchen timer dings. Your cookie is ready. What happened inside that oven? Don't let the apron deceive you! Bakers are mad scientists.

When you slide the pan into the oven, you're setting off a series of chemical reactions that transform one substance, dough, into another, cookies. When the dough reaches 92 degrees Fahrenheit, the butter inside melts, causing the dough to start spreading out. Butter is an emulsion, or mixture of two substances that don't want to stay together, in this case, water and fat, along with some dairy solids that help hold them together. As the butter melts, its trapped water is released. And as the cookie gets hotter, the water expands into steam. It pushes against the dough from the inside, trying to escape through the cookie walls like Ridley Scott's chest-bursting alien. Your eggs may have been home to squirming salmonella bacteria. An estimated 142,000 Americans are infected this way each year. Though salmonella can live for weeks outside a living body and even survive freezing, 136 degrees is too hot for them. When your dough reaches that temperature, they die off. You'll live to test your fate with a bite of raw dough you sneak from your next batch.

At 144 degrees, changes begin in the proteins, which come mostly from the eggs in your dough. Eggs are composed of dozens of different kinds of proteins, each sensitive to a different temperature. In an egg fresh from the hen, these proteins look like coiled up balls of string. When they're exposed to heat energy, the protein strings unfold and get tangled up with their neighbors. This linked structure makes the runny egg nearly solid, giving substance to squishy dough. Water boils away at 212 degrees, so like mud baking in the sun, your cookie gets dried out and it stiffens. Cracks spread across its surface. The steam that was bubbling inside evaporates, leaving behind airy pockets that make the cookie light and flaky. Helping this along is your leavening agent, sodium bicarbonate, or baking soda. The sodium bicarbonate reacts with acids in the dough to create carbon dioxide gas, which makes airy pockets in your cookie. Now, it's nearly ready for a refreshing dunk in a cool glass of milk.

One of science's tastiest reactions occurs at 310 degrees. This is the temperature for Maillard reactions. Maillard reactions result when proteins and sugars break down and rearrange themselves, forming ring-like structures, which reflect light in a way that gives foods like Thanksgiving turkey and hamburgers their distinctive, rich brown color. As this reaction occurs, it produces a range of flavor and aroma compounds, which also react with each other, forming even more complex tastes and smells. Caramelization is the last reaction to take place inside your cookie. Caramelization is what happens when sugar molecules break down under high heat, forming the sweet, nutty, and slightly bitter flavor compounds that define, well, caramel. And, in fact, if your recipe calls for a 350-degree oven, it'll never happen, since caramelization starts at 356 degrees. If your ideal cookie is barely browned, like a Northeasterner on a beach vacation, you could have set your oven to 310 degrees. If you like your cookies to have a nice tan, crank up the heat. Caramelization continues up to 390 degrees.

And here's another trick: you don't need that kitchen timer; your nose is a sensitive scientific instrument. When you smell the nutty, toasty aromas of the Maillard reaction and caramelization, your cookies are ready. Grab your glass of milk, put your feet up, and reflect that science can be pretty sweet.

## Appendix D

### Crime Vignette

At 12:33 a.m. on August 19<sup>th</sup>, 2021, New York City police responded to an incident of assault. The incident occurred between 12:26 a.m. and 12:31 a.m. at Grand Central Station. According to two witnesses, the victim, a white man, was approached by another white man as he was leaving the station. The victim stopped for a few moments as the man tried to speak to him, but then he quickly continued to move toward the exit. The man immediately appeared aggravated and within the next minute had beaten the victim and fled the scene.

The following morning, the police released an update regarding the incident. The perpetrator's location and name were identified (Alex Bennett), and he is currently on trial for charges of aggravated assault. As for the victim, he was taken by ambulance to the closest hospital soon after the assault and did not experience any sustained injuries.

## **Appendix E**

### Childhood History Testimony

During the trial, a forensic social worker testified that Alex grew up in an unsafe family and home environment. More specifically, Alex faced repeated physical abuse from his stepfather for much of his childhood. Furthermore, his mother was in and out of prison throughout his childhood. When his mother would be released and come home, the stepfather would beat her as well, often in front of Alex. Despite Alex's adverse home situation, he kept it to himself out of fear that his stepfather would find out and hurt him even worse the next time. As a result, no one intervened, and Alex continued to be physically abused by his stepfather until moving out of the house at age 18.



## Appendix F

### Causal Attribution Questionnaire

For the following, choose a number from 1 (strongly disagree) to 7 (strongly agree) to indicate how much you agree or disagree with the statement.

1. Alex's character, attitude, or temperament likely influenced his behavior (R)
2. One of the main causes of Alex's behavior was likely a lack of self-control and discipline (R).
3. Features of Alex's social environment likely influenced his behavior.
4. It is Alex's own fault for committing the crime. (R)
5. Alex's behavior is not a reflection of his true self.
6. Alex's behavior is a reflection of his social circumstances.
7. Committing the crime was Alex's own choice. (R)
8. Alex knew fully well what he was doing when he broke the law. (R)
9. There may be some other explanation for Alex's behavior other than it being his choice in the moment.
10. It's likely that this was the first time Alex behaved this way.
11. It is likely that Alex will behave this way again in the future. (R)
12. Committing violent behavior is part of who Alex is. (R)

\*Higher scores indicate a situational attribution, lower scores indicate a dispositional attribution

## Appendix G

### Punishment Recommendation Questionnaire

For the following, choose a number from 1 (strongly disagree) to 7 (strongly agree) to indicate how much you agree or disagree with the statement.

1. I think it's important that Alex participate in a rehabilitation program (such as an anger management program).
2. Alex should be removed from the community.
3. The most important outcome of the trial is that Alex is punished for his behavior.
4. Alex deserves the most severe punishment possible.
5. Rehabilitation will enable Alex to reenter society as a safer, more stable, and more productive citizen.
6. If Alex is placed into a rehabilitative program, it's likely that he will learn from his behavior.
7. It's important that Alex suffers for his crime in order to make him pay for what he did.
8. One goal of Alex's punishment should be to help him identify the reasons that led to his behavior in the first place.

\*Rehabilitation: Qs 1, 5, 6, 8

Retribution: Qs 2, 3, 4, 7

Higher scores indicate more support for rehabilitation/retribution

## Appendix H

### Demographics Questionnaire

What is your age? (text response)

What gender do you identify as?

- Male
- Female
- Non-binary
- Other (text response)
- Prefer not to answer

How would you describe your race? Please select all that apply.

- White/European-American
- Black/African-American
- American Indian or Alaska Native
- Asian/Asian-American
- Native Hawaiian or Pacific Islander
- Other (text response)
- Prefer not to answer

How would you describe your ethnicity?

- Hispanic/Latinx
- Not Hispanic/Latinx

What is the highest level of education you have completed?

- Less than high school degree
- High school graduate (high school diploma or equivalent)
- Some college but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)